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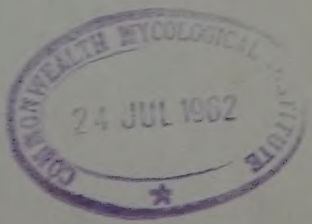

Beihefte

zur

Sydowia

Annales Mycologici, Ser. II.

Herausgegeben

von

F. Petrak (Wien)

II. Beiheft

C. G. Hansford

The Meliolineae

A Monograph

Issued Decembre 1, 1961

1961

VERLAG VON FERDINAND BERGER, HORN, N.-Ö., AUSTRIA

The Meliolineae

A Monograph

By

C. G. Hansford, M. A., Sc. D., F. L. S.

late of the University of Adelaide, Australia

The Meliolineae Supplement.

By C.G.Hansford.

See Sydowia, 16(1962), pp.302-323, 1963

HOST INDEX

By J.A.Stevenson in

Sydowia, 22(1968), 1-4, pp.225 - 249, 1969.

1961

VERLAG VON FERDINAND BERGER, HORN, N.-Ö., AUSTRIA

DEDICATED TO THE MEMORY OF

FRANK LINCOLN STEVENS

late Professor in the University of Illinois, who made very extensive collections of this group of fungi, and in 1927—28 reviewed the species then known;

AND OF

HANS SYDOW

who described a great number of species from the Philippines, Central and South America.

These two workers on the group laid the foundations of our modern knowledge of these fungi, and the present author is greatly indebted to both for their great and willing assistance to him in the early stages of his acquaintance with *Meliola*.

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VERLAG VON FERDINAND BERGER, HORN, N.-Ö., AUSTRIA

An die Abonnenten und Mitarbeiter der „Sydowia"

Die bis jetzt erschienenen Jahrgänge der unter dem Titel „Sydowia" neu herausgegebenen, von H. Sydow begründeten „Annales mycologici" dürften den Beweis dafür erbracht haben, dass sie ihre Bedeutung als internationale mykologische Zeitschrift behaupten konnten. Dem Wunsche einiger Mitarbeiter entgegenkommend, haben wir uns entschlossen, folgende Neuerung einzuführen: Damit die einlangenden Manuskripte so schnell als möglich veröffentlicht werden, wird die Zeitschrift vom 12. Jahrgang an alljährlich in 2—3 Heften herauskommen, die in ca. 6- oder 4-monatlichen Intervallen erscheinen werden.

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I. Introduction.

Since the last survey of the group *Meliolineae* by F. L. Stevens, in Ann. Mycol. Berlin, 25—26, 1927—28, much collecting of these fungi has been done in the tropics, and a large number of new species described. The present author has been engaged in attempting to collect material, descriptions and drawings of all these new species, as well as in the revision of older collections, since about 1929, and the present monograph is the result of this work.

All recent collectors in the tropics, since Ciferri in San Domingo in 1928—29, have been impressed by the richness of the whole group in these regions, and their field experience has without exception been that each species or variety of *Meliola* and its relatives is limited to a comparatively narrow range of host plants. Rarely do we find that a single species extends over more than a single family of Phanerogamic hosts, and following from these observations and experience, all cases in which the older authors have described a species on very widely separated host plants have necessitated re-examination of their specimens; almost invariably this has led to separation of forms they had declared to belong to the same species. Unfortunately a comparatively large number of species of *Meliola* have in the past been described as occurring on "unknown hosts", and while the present writer, with the assistance of phanerogamic taxonomists at the Royal Botanic Gardens, Kew, has been able to provide determinations of some of these "unknown hosts", there still remains a residue of species, so far un-matched with more recent collections, which are still retained as occurring on unidentified hosts in various parts of the world.

In view of the very large number of species and varieties of *Meliola* now known, it is essential to know at least the family of the host of each specimen, before any attempt can be made at accurate determination of the fungus; in practice it is now impossible to key out the species and varieties in any manner capable of rapid or accurate usage. Hence in the present work the species and varieties are arranged according to the families of their hosts, and under each host family a key is provided to the Meliolineae here recognised as occurring upon it. From long experience with this group of fungi, the writer is convinced that this is the most rapid, and the only practical way to arrive at an accurate determination of any individual specimen. It follows from these remarks that it is very unwise to describe new species of this group in the absence of an accurate determination of

their host plants, at least to the family, and much preferably to the host genus and species. In the absence of such host determinations, it will be virtually impossible for future workers to recognise the species; the position with the present group is now akin to that of the *Uredineae*, in which no-one would now consider describing a new species upon an "unknown host".

The *Meliolineae* are widely distributed, especially in the warmer regions of the world, but extend outwards from these into the southern U. S. A. and Chile in America, to almost the southern tip of Africa, to central Europe and Scotland, to Japan and to Tasmania. Hitherto few records have been made from New Zealand, and none from the Atlantic islands of St. Helena and Ascension, but apart from these, it may be said that the group is represented in even the more isolated parts of the warm regions of the world. A large number of species has been collected in Tropical America, mainly due to the efforts of F. L. Stevens, R. Ciferri and H. Sydow. Similarly in South America the classical collectors, Puiggari, Balansa, Ule and Spegazzini laid the foundations of the fungus flora, but here is such a vast region that there must be a very large number of species still awaiting discovery. In South Africa the early collectors MacOwan and Medley Wood were followed by Pegler and Doidge, and it is probable that few species of the *Meliolineae* remain undiscovered there today. On the other hand tropical Africa is still largely unexplored for these fungi, save for Sierra Leone, Gold Coast and Uganda. Few or no records have yet been made for the islands of the Indian Ocean. The most systematically explored parts of Asia are the Philippine Is. and Java, while a few records have been made from India, Malaya, China and Japan. At present the area Burma- Malaya- Indochina- Yunnan represents a very large geographical gap in our knowledge of this group of Fungi, as, indeed, in almost all groups. In Australasia, Northern Queensland, New Guinea and the whole of the Pacific islands remain practically uncollected; the few records from Tahiti, New Caledonia and Samoa mostly date from last century.

Within the tropics, where the *Meliolineae* reach their maximum development, they are most common in scrub or open park-lands; within the dense tropical forest they are comparatively rare on the undergrowth and lower trees, though probably quite common on the inaccessible top canopy. Such specimens as are found in the lower layers of these forests are usually in poor condition and heavily parasitised, as well as being of sparse occurrence save where a break in the canopy allows more light to reach the floor. The group is absent from the arid regions of the subtropics, so that it would appear that there is a minimum water-requirement or humidity level for their development; on the other hand they are quite common in warm

regions subject to long annual droughts, as for instance in parts of South Africa, having an annual rainfall of 35 cm. upwards, but where droughts of six months' duration are common.

Many species are known only from single collections, and are apparently of very limited geographical distribution, but on the other hand some species are very widely distributed through the tropics, occurring on their host-plants wherever these grow. As a general rule, the *Meliolineae* parasitise only the indigenous plants of any particular area, though in some instances they may spread from these to introduced or cultivated plants closely allied to their native hosts. There are a few notable exceptions to this general rule: for instance *Meliola microspora* was originally discovered on *Vandellia diffusa* in Venezuela, and subsequently found again on this same host in Brazil. This plant is introduced to South America from Africa, and it is extremely remarkable that although it is common in parts of Africa, no specimen has yet been collected showing infection by this *Meliola*, which in fact appears not to occur at all in Africa. Again, in South America, whence did this species originate, to attack *Vandellia;* so far no identical collection has been made on any native plant there.

Many specimens of *Meliola* and related genera are frequently parasitised by other fungi, of which some are very widely distributed, while others appear to be localised. These parasites usually limit or even completely prevent the development of setae and perithecia of their hosts, so that in many cases the latter cannot be determined with certainty. Formerly a number of these parasites were confused with their host Meliolineae, especially when the former were in conidial condition, with the result that the latter were described as producing mycelial and even pycnidial conidia.

Most species of *Meliolineae* are normally limited to the leaves of their hosts, but may extend to infect the young green twigs and petioles; occasional species occur on older twigs and branches, but very rarely are fruits infected. The general appearance on leaves is of scattered, more or less circular, black patches, thin to very dense, and sometimes densely velvety with setae; epiphyllous colonies are usually easily detached by the method given later, but those on the lower surface are often much more strongly adherent. The black patches each normally represent a single colony of the fungus, arising from a single spore, which may often be found still in position near the centre; but many species have their colonies widely confluent over the leaf surface. The denser species are conspicuous, and hence often collected, but some species have very thin colonies, scarcely visible to the naked eye.

Few species of the group are strong parasites, and the great majority have no appreciable effect upon their host plants. Usually

only the adult leaves of the host are infected, so that the group as a whole appear to be rather slow in growth; presumably spore germination can occur on young leaves, but these reach the adult condition by the time the fungus colonies are fully developed; field experience indicates to the writer that two to three months are required by many species to develop their full colony size and mature their spores. When their colonies are removed in a cellulose film, most species leave little or no visible effect upon the underlying epidermis; others may leave an indistinct yellowish area, as though the presence of the dark colony had prevented normal chlorophyll development in the palisade tissues immediately beneath it. Some species cause a blackening of the cell walls of the epidermis beneath them, so that when the colony is removed, a black area co-extensive with the colony remains on the leaf; this pigmentation is probably entirely a reaction of the host to the infection, as often the same host develops similar pigmentation below the colonies of *Asterina* or *Schiffnerula*.

The more strongly parasitic species may cause definite yellow to brown areas beneath their colonies, in a few cases even extending somewhat beyond the limit of the external mycelium; these areas are normally limited to the surface immediately below the colony, but in a few species the discoloration may extend through the leaf and be visible from the opposite surface. The discoloured areas very rarely dry out to become quite dead, and as far as the writer is aware, no species of the group ever produces a "shot-hole" effect, by the diseased spot falling away from the surrounding healthy tissue. *Meliola depressula* is remarkable in that it causes an invagination of the leaf beneath each colony, thus very distinct from *M. urceolae*, which has no such effect, even when occurring on the same individual leaf. A few species attack young twigs as well as the leaves of their hosts, or in some cases may be limited to such twigs; here again it is rare to find any appreciable parasitic effect. Perhaps the most strongly parasitic member of the whole group is *Meliola plumbaginis* in East Africa, which can cause the death of whole leaves and branches of individual host plants heavily attacked, though on other individual host plants of the same species, little more than brownish diseased spots may occur on leaves and stems.

II. Life-History.

All fungi of this group are parasitic by means of small, usually ovate to globular, haustoria developed in individual epidermal cells of the host, normally only a single haustorium being formed in one host cell. Each haustorium is connected through the upper wall of the host cell and the overlying cuticle, by means of a fine hyaline

to pale brownish filament, 1—1.5 μ diam., to an organ termed the "capitate hyphopodium" forming part of the external mycelium. These capitate hyphopodia are short lateral branches of the mycelium, closely adpressed to the host cuticle, and each invariably consists of a short stalk cell bearing a single terminal or "head cell", often of characteristic shape, which has in its lower surface next the host cuticle a small pore representing the connection of the filament producing the haustorium in the host cell beneath. Each capitate hyphopodium forms only one haustorium; in a few species the latter may be formed in the subepidermal layers of the host, or very rarely in deeper tissues surrounding the leaf veins; even in these instances each haustorium is connected by its own filament to its parent capitate hyphopodium. The distribution, shape and size of the capitate hyphopodia are used as major characters in separating the species of the group.

It is often possible to trace, even in the mature colonies of most species, their origin from single spores, lying in or near the centre, though when the colonies are numerous they may coalesce over a large part of the leaf surface. Apparently it is an invariable rule that the germinating spore first forms a capitate hyphopodium, in most cases as an outgrowth from one of the terminal cells, sometimes from each end of the spore. In the case of many species with opposite capitate hyphopodia on the mycelium, the first hyphopodium is immediately followed by the formation of a second from the same parent spore cell, so that at even this early stage a germinating spore gives a clue to the species to which it belongs. The next stage in germination is the formation of the first hyphae, rarely as lateral outgrowths from the stalk cell of the primary hyphopodium, normally from either the same or a different cell of the parent spore. Each cell of the hypha or hyphae thus produced forms either capitate hyphopodia or gives rise to one or two branches, according to the species; from a very early stage the mycelial hyphae are recognisable as belonging to the species in question. It is interesting to note here that it is quite common in the author's experience to find spores of the "wrong" species of *Meliola* adhering to, and germinating upon the surface of a leaf. In other words, a leaf infected with one species of *Meliola* may often show spores of quite different character germinating upon its surface. These produce the first capitate hyphopodium in the normal manner, together with the first haustorium, as evidenced by the usual "pore" in the lower surface of the head cell, but do not seem able to develop further. There are three possible explanations of their inability to develop even a vestigial colony: the first haustorium may not be able to penetrate the cuticle and epidermal wall of this "wrong" host, or when it has penetrated these it may not be able to functions as an absorbing organ, or again, any

nutrient it absorbs may be incompatible with further development of the parent spore. The writer has never, amongst the thousands of cases noted, observed any instance in which even a second capitate hyphopodium has been formed (save in the case of species with opposite hyphopodia on the mycelium), nor any attempt at mycelial development, from a spore on its "wrong host". A few cases have been found in which the "wrong" spore is even unable to form the primary hyphopodium in normal manner, and instead gives rise to an elongated, often tortuous, "stalk cell" with a non-functional, often abnormal, head cell at its end, having no "pore" in its lower surface, and hence no haustorium below.

Rare instances have been found by the writer in which a spore has germinated to form „mucronate hyphopodia" instead of the normal capitate hyphopodium; in no such instance had any further development occurred.

As the mycelium develops from the germinating spore, it segments into cells of the length normal to the species, and each cell produces at (or very near) its distal end either capitate or mucronate hyphopodia (the number depending upon the species), or mycelial branches (in most species two, in others only one). The hyphopodia are considered to be specialised mycelial branches, as is evidenced in species having opposite mycelial branching, in which quite commonly one branch is replaced by a capitate hyphopodium. The structure of the capitate hyphopodia has been described above, and they function as specialised absorption organs, the haustoria connected to them being the only intra-matrical parts of these fungi, the whole of the remainder of their development being external to the host cuticle. Normally the capitate hyphopodia are forward-directed ("antrorse") in relation to their parent cells, though in some species they may spread out at wide angles or even be recurved; along the mycelial hyphae they may occur more or less in regular alternate manner, in opposite pairs, or in some species occasionally in threes ("ternate"); in a few species they may be scattered singly at intervals along the hyphae, separated by mycelial cells bearing none; in one or two species they may occur in groups (alternate or opposite), separated by a few mycelial cells devoid of hyphopodia, thus giving a zonate appearance to some colonies. Such characters as these, as well as shape and size of the two cells constituting the capitate hyphopodium, serve to distinguish individual species and varieties within the group.

The mucronate hyphopodia are easily distinguished from the capitate, in that they invariably consist of a single cell, usually swollen below and attenuate more or less suddenly into a short or long "neck", which stands more or less erect away from the leaf surface; in young hyphopodia the neck is closed, but at a later stage appears to be open, as though something had been extruded from

it. The writer, in common with all previous investigators of the group, has not been able to find any evidence of the formation of any kind of "spermatium" or "conidium" within these organs, nor of the extrusion of any body or substance from their apparently open ends. Neither is there any evidence of the formation of any external body on the ends of these mucronate hyphopodia, whose function hence still remains a complete mystery; they are definitely not concerned with any absorption of nutriment from the host, as they are not connected with internal haustoria, and their ends point away from the host surface. One or two cases have been seen by the writer, in which fine hyaline hyphae apparently connected with the open ends of the mucronate hyphopodia, but further investigation showed these fine hyphae to belong to some other fungus, and probably represented the beginnings of hyper-parasitism. Very few species of the whole group are without these mucronate hyphopodia in almost every colony; in the exceptions, mostly species with very dense colonies, they have probably merely escaped observation. In some species they are numerous in some colonies and almost absent from others on the same leaf. As compared with the capitate hyphopodia, the numbers of the mucronate hyphopodia may vary from few to many, and in some species or in individual colonies of others, the may even exceed the number of the capitate. It is thus probable that they are essential organs in the life-history of most, if not of all, species of the group, but as stated above, their function still awaits discovery. In many species the mucronate hyphopodia are formed at an early stage of colony development, while in others they may be delayed, and then are often formed on special hyphae growing from the centre of the colony outwards over the earlier mycelium and not bearing mycelial setae.

Some species of the group continue their mycelial development until they cover a large part or even the whole of one surface of the host leaf, but normally there appears to be an upper limit to colony size in each species. In some all colonies may be well below 1 mm. In diameter, while in others they may reach maximum development at anything between 2 and 20 mm. It is noteworthy that in many species the effect of parasitism by species of Helminthosporium, Dimerium, Calonectria, Arthrobotryum, Trichothyrium, etc. may increase the colony size much above the normal limit. The various species also differ in the density of their colonies; in some the mycelial cells may be short and the branching very close, so that the hyphae with their hyphopodia form a continuous solid plate one cell thick. At the other extreme, some species have large colonies so thin and diffuse as to be scarcely visible to the naked eye, and consist of very loosely branched hyphae. Other species, especially those occurring on, or even limited to, the lower surface of the host

leaf, may have loosely radiating mycelium, branched at rather long intervals, but loosely interwoven in two or more layers, and then with the capitate hyphopodia often irregularly scattered along the hyphae, where these happen to touch the host surface beneath; in many of these species the mucronate hyphopodia are produced on the most superficial hyphae. Amongst the species of the group there is every possible gradation and variation between these extremes.

The mycelial hyphae of most species are of very uniform diameter, and often the cells are fairly uniform in length; in all species the hyphae, hyphopodia, setae and perithecia are all brown to black-brown in colour. The hyphae may be more or less straight, or in other species distinctly undulate, sinuous or tortuous, rarely even sharply geniculate-bent. As a general rule, where a species occurs on both sides of the host leaf, the hyphophyllous colonies have less straight, and often looser, mycelium than those on the upper sufface, though this is by no means universally true. In the hyphophyllous colonies the mycelium bears no direct relation to the host stomata; sometimes it may plug the outer stomatal cavity, but even in the same colony many instances can usually be found of hyphae passing directly over a stoma with no deviation or formation of special cells. In no instance known to the writer does a species of the Meliolineae utilise the host stomata in any manner for penetration or absorption of nutrients from the host leaf, in contra-distinction to many species of Microthyriales, in which penetration of stomata is the only method of parasitism.

The characters of the mycelium, as well as those of the capitate hyphopodia, are not the result merely of the configuration of the host cuticular surface, as is evidenced by the occurrence of many cases of mixed infection by two distinct species of the group on a single host leaf; these species may have widely different mycelial and hyphopodial characters. For instance, one species may have straight mycelium, dense colonies and very irregular, lobed hyphopodia, while the other may have loose colonies, crooked mycelium and regular ("entire") hyphopodia. These characters, therefore, are specific to the fungus, rather than the result of the sculpture of the host cuticle. Yet in certain circumstances, some characters of mycelium and hyphopodia are dictated by the host surface. A good example of this is *Meliola alstoniae*, which grows on both surfaces of the leaves of species of Alstonia. The upper surface of these leaves is smooth, and the parasite on it has straight mycelium with entire capitate hyphopodia. The lower surface, on the other hand, consists of columnar epidermal cells with narrow valleys between them; here the fungus extends its mycelium loosely and irregularly over the summits of the columns, with some hyphae also winding trough the valleys; both types of hyphae bear capitate hyphopodia, but the stalk cells

of those attached to the more superficial hyphae are necessarily lengthened to bring their head cells into contact with the valley bottoms, through which all the hyphopodia penetrate to form their haustoria, presumably because the host cuticle is thinnest in these situations. The head cells themselves are often distorted by their growth in these narrow valleys, and the differences in appearance and microscopic characters between the colonies on the two surfaces are so great, that the present writer at first assumed them to represent two distinct species, and described the hyphophyllous form as *Meliola alstoniicola*. Since then, many similar, though perhaps not as striking, examples have come to his notice.

The majority of species of the group form mycelial setae, and in the present monograph are all included in the genus *Meliola*, as distinct from the other genera devoid of setae. The setae arise as lateral outgrowths from usually the middle of mycelial cells, and almost immediately bend up away from the host surface to continue upward growth. In most species these setae are straight and unbranched, with acute or obtuse tips when fully mature (most immature setae have pale, somewhat truncate tips), but other species have the setae uncinate or even coiled, and yet others have setae with characteristic branching or dentation at the tip. All these characters are of value in separation of species. It is important to make certain that the "setae" observed in any collection really belong to the *Meliola* under observation, and their definite connection with their parent cells must be completely established. Many species have been described in the past as possessing mycelial setae, which have later proved to be the conidiophores of *Helminthosporium* hyper-parasites; their normal, unparasitised colonies may or may not have true setae. The mere presence of a second mycelium in close relation to that of the Melioline under examination should put the observer on his guard in this matter, and he should search for unparasitised colonies to confirm his first impression of setae. The function of the mycelial setae in *Meliola* is quite unknown; the walls and apices in most species are quite smooth and regular, with no vestige of conidial production. A few species form setae only on some colonies, and many colonies, sometimes the great majority are "glabrous"; an instance is *Meliola soroceae* var. *africana*.

No form of asexual reproduction by conidia is known for any species of the *Meliolineae;* all such cases reported by workers in the past have proved to be based on confusion of various hyper-parasites with their Melioline hosts. There is an extensive flora of these hyper-parasites, including *Ascomycetes*, *Phomales* and *Hyphomycetes* of many different genera (Hansford 1946).

Sexual reproduction is by ascospores, produced normally two in each ascus, though four or eight are initiated, of which two, three,

or rarely four mature. The asci are enclosed in organs usually termed perithecia, though it is rather doubtful whether these are true perithecia in the modern sense of this term. The only recent account of their development and cytology is that of Graff (1932), and this is strongly suspect on many points. The perithecia commence as short lateral branches of the mycelial hyphae, at first indistinguishable from capitate hyphopodia, having a stalk cell and a "head cell", but apparently the latter does not develop a haustorium beneath it. Instead it soon enlarges, remaining more or less rounded in outline, and divides to form a small plate of cells, which continues enlargement to form a small globose mass of dark cells. These enlarge, and divide to give rise to the mature ascoma, consisting of 1—2 layers of external dark, thick-walled cells, enclosing a central mass of hyaline, thin-walled parenchyma, at the base of which a number of asci are formed, and enlarge at the expense of the hyaline "ground tissue", little trace of which remains at maturity. The details of the internal structure at the various stages of growth of the "perithecium", as well as the origin of the asci, must await further investigation. Until these are accurately known, the relationships of the *Meliolineae* to other orders of the Ascomycetes remains doubtful.

The perithecia of genera other than *Amazonia* are more or less globose, with an outer wall of opaque black, angular, rather large cells, not radiately arranged (as distinct from *Microthyriales*), and the wall may bear on its sides and upper part projections varying from mere rounded or conical extensions of individual cells (as in *Asteridiella*), to "larviform appendages" *(Appendiculella)* or true perithecial setae *(Irenopsis* and some species of *Meliola)*. These protuberances of the perithecial wall are difficult to define clearly, but for the purposes of the generic separation here accepted, the definitions are given later in this work. At maturity the perithecium becomes irregularly broken at the apex and the spores are apparently passively liberated trough it. Graff, on the other hand, gives an account of an apical pore in the inner perithecial wall, lined by periphyses; if this can be verified, we should expect the asci to discharge their spores through such an opening. Throughout the group the ascospores are dark in colour, and each consists of four or five cells in a single row, usually constricted at each septum; other genera of the family *Meliolaceae* have different spore characters (Hansford 1946).

The genus *Amazonia* has the perithecia covered by an upper layer of radiating mycelial hyphae, and their structure is described later.

The writer has attempted repeatedly to germinate the ascospores of several species of *Meliola* and *Asteridiella*, both in the laboratory and on their correct hosts in the field; these attempts were always

unsuccessful. No other worker has yet reported growth of these fungi either in the laboratory or as artificial inoculations on leaves. In the writer's experiments in the field, the ascospores were placed beneath an ordinary cover-slip attached to the leaf, not sealed down; no germination occurred, even though in more than one instance natural infections occurred on the same leaf outside the cover-slip.

III. Taxonomic Characters.

The group *Meliolineae* presents a number of characters which have been, or might be, of use in separation of genera and species, but it still remains largely a matter of personal opinion as to which are the most important, and whether the single genus *Meliola* should be used to include all species, or whether segregates should be made from this now very large genus.

1. Spore Characters.

Within a given species, or group of species, the ascospores are very uniform in shape, size and septation, and in measurements it is rather rare to obtain more than a variation of 10 μ in length or 3—4 μ in greatest breadth; exceptional spores may be found outside these limits, but are usually obviously abnormal. Some species have regularly 3-septate spores, but by far the great majority have their spores 4-septate; all are more or less constricted at the septa, with smooth surface. A very few species, of which the best known is *M. trichostoma*, have spores with conoid ends; some species on Cyperaceae have spores with definitely apiculate ends, but the remainder have bluntly rounded ends. Most species have their spores more or less straight, and in section these are somewhat flattened on one side; within the ascus the flattened sides of the two spores are together in the centre, and when the spores eventually come to rest and germinate upon a leaf, the flat side lies in contact with the cuticle. In some species the spores are curved, and in germination such spores lie on one side or the other, showing the full curvature in the usual method of mounting.

All spores have dark walls 0.5 to 0.75 μ thick and the septa are of the same order of thickness. In a few species one end of the spore is normally slightly wider than the other, giving a slightly clavulate appearance; in others the central cell may be noticeably the widest and the longest, or the terminal cells may be distinctly smaller than all others. In many collections a few spores may be found which have abnormal shape and septation, but throughout the present work these are ignored.

2. Hyphal characters.

The length and diameter of the mycelial cells are usually fairly uniform for each species, and are included in the descriptions given later in this work; the character of the mycelial branching is also important, as it forms the basis of the general appearance of the colony under the microscope. The branching may be more or less regularly alternate, regularly opposite, or mixed; the angle of branching is often characteristic of certain species or groups, as is the distance between successive branchings, which leads to differences in density of the colonies.

3. Characters of Capitate Hyphopodia.

These are extremely important in distinguishing between species and varieties, and include their distribution along the parent hyphae, angle with these, shape and size. Different species may have these hyphopodia regularly opposite, regularly alternate, or mixed opposite and alternate along the hyphae; in the latter case. I have endeavoured to indicate the usual proportions of opposite and alternate hyphopodia in each case, as a percentage of the total number of hyphopodia observed, though it must be remembered that in different parts of even a single colony, this distribution may show considerable variation. It is also necessary to record here that in species having a regularly alternate distribution of these hyphopodia, one or two pairs of opposite hyphopodia may occur in each colony. Similarly in species characterised by opposite hyphopodia, a few alternate ones may be found, usually in positions too crowded for the development of their opposite members.

Some species have their capitate hyphopodia either straight or slightly bent forwards and closely adpressed to the mycelial cell next in front of their parent cell ("antrorse"); others have these organs widely spreading or even reflexed. The total length of the capitate hyphopodia often serves to separate closely similar species, as also the lengths of each of the two component cells; in some species the capitate hyphopodia consist of long stalk cells with comparatively small and short head cells, while in others the reverse is the case. A character which has received much attention from early days of the history of the group, is the shape of the head cell, which may vary from globose and entire in some species, to ovate, conoid, oblong, truncate, or irregularly angulose to more or less deeply palmate-lobate. Where a species is amphigenous on the host, the hyphopodia on the lower surface are often more irregular in outline than those on the upper surface; in such cases the present author has described their appearance on the upper surface of the host leaf, and where the differences are sufficient, indicated these in the hyphophyllous colo-

nies. These differences are largely the result of different surface sculpture of the host leaf, and the presence of more numerous trichomes, or peltate scales, on the lower surface frequently affects both mycelial growth and the shape and size of the capitate hyphopodia.

4. Characters of Mucronate Hyphopodia.

In general these organs are remarkable for their uniformity throughout the whole group. In most species they are produced in opposite pairs along the hyphae, either mixed with the capitate hyphopodia, or limited to certain special branches of the mycelium. They are often formed singly opposite a capitate hyphopodium, even in species in which the latter normally are alternate only. *Meliola bicornis* and its varieties, as well as a few closely related species on Leguminosae, show many cases of the mucronate hyphopodia being formed three to a single parent cell, usually with a terminal pair opposite each other and the third close behind one of these; in cases where such "ternate" hyphopodia are at all common they give a very crowded appearance to the colony under low magnification, and hence very characteristic.

In shape the mucronate hyphopodia may vary from conoid to ampulliform, in the latter case the shape being due to a more sudden change in diameter from the "body" to the terminal "neck" portion, which even in the same colony may vary from a central position to slightly lateral, described by Stevens as "lageniform". A few species produce mucronate hyphopodia with much elongated "necks"; comparatively few species are known without any mucronate hyphopodia, though this is probably due to incomplete or too difficult observation. In those species in which the mucronate hyphopodia are formed on special hyphal branches ("separate"), these may either occur in the centre of the colony, and then often overgrowing the original mycelium with its capitate hyphopodia, or may extend beyond the limits of the remainder of the colony.

As pointed out above, the function of these mucronate hyphopodia still awaits discovery; their necks invariably are directed upwards, away from the surface of the host, so that they can play no part in absorption of nutrients from the latter; they do not produce haustoria from their lower surfaces.

5. Characters of Mycelial Setae.

The presence of setae on the mycelium is accepted throughout the present work as the distinguishing feature of the genus *Meliola;* all species devoid of mycelial setae are classified here into other genera. Within the genus *Meliola* itself, the mycelial setae may be scattered more or less uniformly over the colonies, or they may occur

only in groups around the bases of the perithecia, or again may occur in both situations, in some cases those around the perithecia differing considerably from those scattered over the colony. In cases where the setae are limited to groups around the perithecia, it is very important to ascertain without doubt whether they arise from the basal mycelial hyphae or from the sides and upper half of the perithecial wall. No case is known to the writer of setae arising from the lower half of the perithecial wall, so that as far as he is aware, there is a clear distinction between "mycelial" and "perithecial" setae. In the past a number of species have been described as having setae on the perithecia, whereas in fact they all arise from the mycelial subiculum around its base; in the classification adopted here, this distinction involves generic separation and therefore necessitates accurate observation. Other workers, notably R. Ciferri during recent years, have adopted a rather modified conception of "perithecial setae", to include those species with what the present author considers to be groups of mycelial setae closely arranged around the perithecia. In the writer's opinion and experience, this has led to considerable confusion, and even to duplication of species already accurately described, hence it is strongly recommended to all workers that the closer definition indicated above be universally adopted.

The mycelial setae may be simple, or characteristically dentate at the apex, or branched in various manners; the apices may vary from obtuse to acute, even in the same species, though usually each species has them either one or the other (here it is important to be certain that the setae under examination are fully mature and dark in colour right to the apex, as immature setae of most species are obtuse to truncate and somewhat pale near the apex). The mycelial setae of most species are straight, save for the bend at their base, where they originate from their parent cells, but in other species may be more or less flexuous throughout their length, while yet others have them bent, hooked ("hamate"), widely arcuate, or even coiled in the upper part. In length the setae may show considerable variation in different collections of the same species, so that the writer, from long experience with the whole group, considers it best and most practical to give merely the maximum length he has observed; this often serves to assist in rapid determination of a specimen. There is often a great difference in the length of the mycelial setae in epiphyllous and hyphophyllous colonies of the same species, especially in the case of host leaves more or less glabrous above, but with long, or very numerous hairs on the lower surface.

The mycelial setae arise singly from a cell of the mycelium; in most cases this swells out at one side near the middle of its length, and the swelling extends along the leaf surface before turning upwards more or less sharply to form the main axis of the seta. This sudden

upward turn was apparently the origin of the specific epithet of *Meliola geniculata*, but is now known to be almost universal in the genus. The parent cell of each seta may or may not already have formed capitate hyphopodia at its distal end; the writer has not found any case in which more than one seta arises from a single parent cell, nor of a seta being formed from a cell bearing mucronate hyphopodia. The distribution of the mycelial setae along the hyphae is usually quite irregular.

6. Perithecial Characters.

In many species the perithecia are irregularly and widely scattered over the colony, but in others they may be aggregated into a more or less close central group, while in a few species the colonies, usually minute, bear only a single central perithecium. In the genus *Amazonia* the true perithecia are hidden beneath a closely radiate plate of mycelial hyphae, which usually extend beyond the sides of the perithecium as "marginal fimbriae" and ultimately diverge to form ordinary hyphae with hyphopodia. The true perithecia are somewhat flattened-globose, with a wall of several layers of hyaline parenchyma, enclosed in an outer layer of somewhat larger cells, which may or may not be coloured brown. At the apex, in the species the writer has sectioned, there is a more or less definite rounded pore, lined by very short horizontal or somewhat upward-directed, hyaline periphyses, but there is no development of an ostiole outside the general contour of the perithecium; externally the apical pore is entirely hidden by the mycelial covering layer, which eventually splits in an irregularly radiate manner. Though superficially the perithecial structure of *Amazonia* approaches that of the *Microthyriales*, where it was originally classified, internally there is little similarity, and its affinities are entirely with the *Meliolineae*.

In all other genera of the group, the perithecia are globose in the mature, fresh, state, though on drying for preservation they often become cupulate-collapsed; all are black, with walls composed of 2 or more layers of dark brown, thick-walled cells, enclosing inner layers of smaller, thin-walled, hyaline parenchyma; in texture they are brittle, but not hard and carbonous. Most perithecia have in early stages of development a solid basal disc of dark parenchyma; in some species this disc is more extensive and can be seen at full maturity. In yet other species the minute basal disc gives rise to mycelial hyphae radiating outwards for some distance, and which may or may not bear hyphopodia in the normal manner. As a general rule the dark colour of the central part of the basal disc tends to disappear as the perithecium enlarges above it, so that the mature perithecium in section rests on a thin base closely adherent to the host cuticle, and almost hyaline in colour.

The surface of the perithecium is regarded as important; it is smooth in very few species, but is usually formed of cells more or less rounded-protuberant on their external surface, giving the surface a roughened appearance ("verrucose"). In the genus *Asteridiella* the surface cells of the perithecium vary from rounded to conoid, and may project from the general surface up to 35—40 μ. In addition to the usual "verrucose" surface, the perithecia of the genus *Appendiculella* have certain surface cells prolonged into "larviform appendages", elongated outgrowths, usually paler in colour and transversely striate, thin-walled; the striations in most cases appear to be caused by the elongation of the inner wall layers fracturing the darker outer layer. The species of the genus *Irenopsis* and also a few species of *Meliola* have verrucose perithecia which bear setae on their upper halves; these setae are usually few in number and scattered over the upper surface, not arranged in a definite ring around the apex, as is often the case in the Pyrenomycetes. These perithecial setae are usually dark in colour, narrower than the appendages of *Appendiculella*, rather thick-walled, smooth or roughened on the surface, straight or bent to coiled at the apex, which may be obtuse or acute; in some species the setae are septate, but in others are continuous.

Though there is some degree of convergence in the characters of these perithecial outgrowths, in practice it is not usually difficult to decide to which genus a collection under study belongs. The maximum size of the perithecium, as also of its appendages or setae if present are always recorded.

7. Colony Characters.

The occurrence of the colonies in relation to the host is often of importance, whether epiphyllous, hypophyllous or on petioles or stems, and wheter single or confluent. Some species have always very dense, sharply delimited colonies, while others have thin, loose colonies tending to spread over the leaf. These are important specific characters, and where a species is amphigenous, its appearance on each side of the leaf is worthy of mention, as some future collections may show it on one side only. Size of colony is often a specific or varietal character, and in the case of *Meliola* species the density and distribution of the mycelial setae is important to record.

In general, all characters which have been utilised to determine a specimen should be recorded for the future, even though some may not appear to be important at the time. To close this account of characters used in the taxonomy of the group, it is worthy of mention that the species on some host families are so uniform as to render it a matter of extreme difficulty and some doubt to decide

how many really distinct species and varieties are in fact concerned. For instance the species occurring on the Gramineae are very uniform, as also those on Cyperaceous hosts, while those on Rubiaceae or Papilionaceae are even more numerous and difficult.

IV. Laboratory Techniques.

The collection of specimens of the *Meliolineae*, and their preservation, are relatively simple mattens as compared with those of some other groups of fungi. As they usually occur on leaves, they can be dried by the usual pressing method used for phanerogamic specimens, and then placed in herbarium packets. As has been mentioned above, it is essential to obtain as accurate a determination of the host plant as may be possible. As long as the usual herbarium methods are used to protect the specimens from insects and moulds, they appear to keep in good condition indefinitely; the oldest collections I have myself examined are dated 1804 from Australia in Herb. Kew, and 1813 from Juan Fernandez in Herb. Stockholm; both were found in excellent condition.

It is important that the specimens be placed in packets of such size that there can be a minimum of friction between them and the coverings; if the packets are too large this friction tends in course of time to remove all setae and perithecia from the specimens, which thus become virtually indeterminable. Similarly if it is desired to keep permanent prepared slides with each specimen, these should be placed in separate packets, each in a flat cardboard slide case; much damage to specimens has occurred in the past from the practice of placing the naked slides in the same packet as the specimen; the latter is subjected to severe friction, and in time the slide usually becomes broken and often useless. The writer prefers to keep his slide collection in a separate, specially designed cabinet, and by this means saves unnecessary reference to the specimen packets themselves.

For routine examination of material, my experience has been that for film preparations collodion dissolved in acetone is very much preferable to the solution in ether-chloroform, in that the resulting film preparation is much tougher and somewhat thicker, and hence much less liable to damage or distortion in peeling from the leaf and in mounting. The acetone solution is also capable of removing many species more or less intact from the host, which are impossible to obtain satisfactorily in films made from the etheralcohol solution. I have yet to find any better solution than the acetone one mentioned; other solvents and solutes have been experimented with, but all rejected from one cause or another. Many workers use Necol or similar solutions; these have few if any advantages over the collodion-

acetone and suffer from the great disadvantage that in time thea turn much more yellow-brown, whether mounted in lacto-phenol or in canada balsam.

In use, the collodion-acetone is placed as a drop upon the colony selected for examination; after it has dried completely, its removal from the leaf usually brings the whole of the surface mycelium intact within it. The film can then be mounted directly into lacto-phenol, and the mount ringed with two successive layers of nail polish. The writer prefers, however, to mount his films of Meliolineae direct into canada balsam, and thus obtain a permanent mount; admittedly these show the dark hyphae full of air, with their dark colour thereby accentuated, but this has not been found to be a serious disadvantage, as the septa usually show quite clearly in mycelium, hyphopodia and spores. If required, most of this air can be removed by repeated heating and cooling of the preparation, before it is finally hardened for preservation. There is a distinct advantage of mounting the whole film, as removed from the leaf, as the whole colony is kept in its original condition, and also should the slide be broken or damaged, the balsam can be removed by xylol, and the film re-mounted on a new slide.

By the method described it becomes possible to retain the actual type colonies, from which the original description of a species or variety has been made, as permanent preparations; as such they must rank higher than the "type collection", which may show other colonies varying from description, and also may contain colonies of other species or even of unrelated fungi. Such film preparations show almost all details required for determination of a specimen; in them it is usually possible to trace a colony back to its originating spore, which can then be compared with any loose spores lying around in the preparation. In order to ensure in descriptions of new species that the spores measured are fully mature, the writer prefers to measure germinating spores on the leaf, checking their measurements with those of other spores found to have developed into recognisably correct colonies of the same species; by this means usually a sufficient range of mature spore size is obtained, without making a separate mount of perithecia. The latter are comparatively few in any collection, and repeated perithecial mounts taken from a type specimen must sooner or later completely denude it of such, so that later workers have to rely entirely on previous descriptions of the perithecia. In the writer's experience what appear to be mature spores expressed from perithecia are noticeably smaller than those which have been exposed and have germinated on the leaf surface; on the other hand even very slightly immature spores have their walls somewhat elastic, and in process of mounting these may be slightly compressed, to give measurements abnormally large, especially in transverse width.

Spores of other species than that under observation are commonly found in film preparations, and care must be taken not to include any of these in the description of a new species, or in the determination of any specimen; this error has occasionally been made in the past, even by experienced workers such as Stevens and Sydow. Where more than one species occurs on the same leaf, the method of searching for young colonies of each and measurement of the spores from which they have originated, appears to the writer to be the only certain means of ensuring that each spore is connected with its correct species.

Before proceeding to make film preparations or other mounts for examination under high magnification, the writer finds it essential to obtain as much information as possible under a low-power ($\times$ 30 to $\times$ 40) binocular dissecting microscope; every portion of the specimen can be examined by this means without damage, and the most suitable colonies can be selected for mounting.

V. Scope and Plan of the Present Monograph.

In his endeavours to locate and re-examine type material of all species hitherto described, the writer has worked through the collections of Meliolineae in the following herbaria:

	Abbreviation used in this monograph.
Royal Botanic Gardens, Kew	K
Commonwealth Mycological Institute, Kew	IMI
Naturhistoriska Riksmuseet, Stockholm	S
Cryptogamic Herbarium, Museum National d'Histoire Naturelle, Paris	P
Herbarium bogoriense, Bogor, Indonesia	BO
Farlow Herbarium, University of Harvard	F
F. L. Stevens Herbarium, University of Illinois	FLS
Instituto Botanico Spegazzini, La Plata	SPEG
Instituto Biologico, Sao Paulo, Brazil	
Amani Herbarium, Tanganyika	
Dept. of Plant Pathology, Union Dept. of Agriculture, Pretoria, South Africa	PRET
Herb. Crypt. Ind. Or., New Delhi	
Dept. of Plant Pathology, Cornell University	CUP
Jardin Botanique, Bruxelles	BRUX
Instituto Micologico, University of Recife	IMUR
Dr. M. J. Thirumalachar, Bangalore, India	
Dr. L. Fraser, Dept. of Agriculture, Sydney	
Dr. F. L. Hendrickx, INEAC, Mulungu, Congo Belge	
Dept. of Botany, University of Melbourne	
National Herbarium, Melbourne	
Dept. of Botany, University of Tasmania	
Dept. of Botany, University of Queensland	
National Herbarium, Brisbane, Queensland	
Dept. of Agriculture, Sydney, New South Wales	

Abbrevation used
in this monograph.

Dept. of Scientific and Industrial Research, Auckland, New Zealand
Dept. of Plant Pathology, Buenos Aires
Dept. of Plant Pathology, Waite Institute, Adelaide ..... WARI
Dept. of Botany, British Museum, London ..... BM
Dept. of Plant Pathology, National Taiwan University, Taiwan, China

In addition, a considerable number of specimens have been examined, through the courtesy of Dr. J. A. Stevenson, from the National Fungus Collection, U. S. Dept. of Agriculture, (USDA). The writer's own collections from Jamaica and Uganda are housed between the Royal Botanic Gardens, Kew, and the Commonwealth Mycological Institute. Mr. F. C. Deighton's collections are all in the latter Institute. The specimens of the Philippine Bureau of Science were distributed to many different herbaria, and are here abbreviated to PBS.

I wish here to record my deep appreciation of the assistance given me by the authorities in charge of all the collections listed above, in so readily permitting me the loan of their material for examination, and in several instances for assistance in the publication of new species found amongst them. In addition I have to thank the very numerous collectors in many parts of the world, who have made special efforts to collect material of the group for my examination. The list of these collectors is too long to include here, and their collection areas sample almost the whole known area of distribution of this group of fungi. I have particularly to acknowledge the great help and co-operation I have at all times received from Mr. F. C. Deighton, now at the Commonwealth Mycological Institute. Workers at the Royal Botanic Gardens, Kew, at Harvard University, at Herbarium Bogoriense, and at U. S. Dept. of Agriculture, have determined for me a number of host plants, often with extreme difficulty, owing to the paucity and incomplete nature of the material available.

In order to compress this monograph into reasonable size, and to avoid continual repetition, the descriptions of each species and variety are condensed by the use of the following abbreviations, and by omission of characters common to all species of each genus: —

Ms. = mycelial setae
Ps. = perithecial setae
ch. = capitate hyphopodia
mh. = mucronate hyphopodia
hc. = head cell of capitate hyphopodium
stc. = stalk cell of capitate hyphopodium
P. = perithecium

app. = perithecial "larviform appendages"
sp. = spore
Col. = colony

Each species is described under the name I accept as correct under the International Rules of Botanical Nomenclature, and is followed by synonomy in cases where I have myself checked that this is correct, by examination and comparison of authentic specimens. For each species I have myself examined, I have presented a complete description drawn up from my own preparations, and this is accompanied by a set of drawings made either by the aid of a camera lucida, or by projection direct on to the drawing paper, originally at a magnification of exactly 1000, but here reduced to a standard of × 250. Under each species is also a list of specimens determined by myself; this list also indicates the geographic distribution and host range of the species.

The general arrangement of the monograph is that the species are listed according to the family of host-plant on which they occur; these host-families are arranged according to *Hutchinson*'s system as published in his two books "Families of Dicotyledons" and "Families of Monocotyledons", to which have been added at the end the *Coniferae*, *Lycopodiales* and *Filicales*. An alphabetical list of these host-families and their numbers according to Hutchinson's system is given as an appendix to this Monograph, followed by an index to specific epithets of the *Meliolineae*. This arrangement of the whole work follows closely the methods which I have found most convenient and expeditious in dealing with the very large numbers of specimens I have now examined.

For each species a "modified Beeli formula" is given after the accepted name and citation, based on the following definitions: —

Main characters, numbers to left of stop: —

(1) Spores, normal septation
- 2 ..... 3-septate
- 3 ..... 4-septate

(2) Perithecia:
- 1 ..... without setae or appendages
- 2 ..... bearing "larviform appendages"
- 3 ..... bearing uncinate or coiled setae
- 4 ..... bearing straight setae

(3) Mycelial setae, including those from perithecial disc and subiculum:
- 0 ..... absent
- 1 ..... simple, entire, straight, or at least not unicate or coiled
- 2 ..... simple, entire, uncinate or coiled
- 3 ..... dentate or shortly furcate (below 30 μ)
- 4 ..... branched, the branches usually over 30 μ

(4) Capitate hyphopodia:
- 1 ..... alternate or unilateral (less than 1% of total number may be opposite)

2 ..... regularly opposite, save where crowding will not permit
3 ..... mixed opposite and alternate

Measurements, numbers to right of stop: —

(1) Spore length, maximum observed for normal spores:
1 ..... below 20 μ
2 ..... 21—30 μ
3 ..... 31—40 μ
4 ..... 41—50 μ
5 ..... 51—60 μ
6 ..... over 60 μ

(6) Spore width, maximum observed in normal spores:
1 ..... up to 10 μ
2 ..... 11—20 μ
3 ..... 21—30 μ
4 ..... 31 μ and over

(7) Perithecia, maximum diameter observed:
1 ..... up to 100 μ
2 ..... 101—200 μ
3 ..... 201—300 μ
4 ..... over 300 μ

(8) Mycelial setae, maximum length:
1 ..... up to 300 μ
2 ..... 300—500 μ
3 ..... 500—1000 μ
4 ..... over 1000 μ
0 ..... absent

In case of species with a variable character, this is indicated by a fraction in the formula; thus species having mycelial setae both simple and dentate are shown as $\frac{1}{3}$. Few species have a constant formula, as like fungi of all other groups, they show considerable variation in different collections, even from the same locality and on the same host.

Throughout the following pages it will be noted that a high proportion of the individual species and varieties are represented by only a single collection; this must be taken as an indication of our lack of knowledge of the whole group, as it is probable that many modifications of the arrangement here adopted will be required when further collections have revealed the extent of variability of each species. The author has adopted what he considers to be a rather conservative attitude in the separation of species and varieties, and it is possible that some at least could even now be divided into separate species or sub-species.

There undoubtedly exists in the warmer parts of the earth a very large number of species of *Meliolineae*, which have not yet been collected, so that the present work cannot be considered as approximating to a complete review of the group, though every effort has been made to incorporate here all specimens within reach of the

author. With the aid of the monograph, it should be possible for other workers to classify their new collections, and to ensure that any new species or varieties they may wish to describe are sufficiently distinct from those included here.

VI. Taxonomy of Genera.

The genus *Meliola* was founded by Fries in Systema Orb. Veg., III, 1825, and was emended by Bornet in Ann. Sci. Nat., Bot. Ser. III, 18 : 257, 1851. Until 1917 it was the only genus recognised in the present group, to which it gives its name, the Meliolineae. In 1897 McAlpine in Australia described the genus *Asteridiella*, but classified it as belonging to *Microthyriales*, where it was compiled in Saccardo's Sylloge Fungorum; it was not until 1954 that the type was re-examined and found to belong to the *Meliolineae*.

The *Meliolineae* may be defined as follows:

Parasitic fungi, normally occurring on leaves and young stems, having dark superficial mycelium, which produces both capitate and mucronate hyphopodia; the capitate hyphopodia connected by fine filaments trough the cuticle and cell wall with small haustoria in the epidermal cells of the host, rarely deeper within the host tissues. There is no other penetration of the host. No conidial stage is known for any species. Perithecia formed above the mycelium (except in the genus *Amazonia*), arising as short lateral branches similar to the capitate hyphopodia, then enlarging to become globose (flattened-globose and with a superficial covering of radiate mycelium in *Amazonia*), with a wall of several layers in the mature state, the outermost being parenchymatous and dark brown, the inner layers thin-walled and subhyaline, fracturing irregularly at the apex when mature, and often cupulate-collapsed in the dry state. Asci several in a loose basal, group, erect, replacing the original central hyaline parenchyma of the perithecium, sessile or subsessile, rounded and sometimes slightly thickened at the apex, especially when immature, at first 4—8-spored, at maturity usually with 2 spores, less commonly with 3, rarely with 4, aparaphysate, thin-walled at maturity and soon disappearing. Spores dark brown, cylindric, ellipsoid or subfusoid, straight or bent, more or less constricted at the 3 or 4- septa, smooth, often somewhat flattened along one side.

The number of known species of the group increased rapidly during the period 1880—1917, and then Theissen and Sydow made the first subdivision of the genus Meliola, by erection of the new genus *Irene* to contain those species having no mycelial setae; they selected as the type species *Irene inermis* (Kalchbr. & Cooke) Theiss. & Syd. In 1919 von Hoehnel proposed a further subdivision of

Irene, by the segregation of species with "larviform" or "vermiform" appendages on the perithecium into the new genus *Appendiculella*, with type *A. calostroma* (Desm.) Hoehnel. Stevens in 1927 again split off from *Irene* those species having true perithecial setae, to form the new genus *Irenopsis*, with *I. tortuosa* (Wint.) Stev. as designated type.

Up to this point the classification into genera appears clear and straightforward, though it leaves by far the greater number of known species still within the original genus *Meliola*. Unfortunately Stevens in 1927 introduced confusion, by his mistaken concept of *Irene inermis*, stating that this possessed "larviform appendages". Both Dr. E. M. Doidge and myself have examined a wide range of specimens of this South African species, and we are completely agreed that it has no such appendages, but merely conoid projections of the surface cells of the perithecial wall. Hence Stevens' reduction of *Appendiculella* Hoehnel to synonomy with *Irene* Theiss. & Syd. is incorrect, and these two genera must stand as originally defined. On the other hand, all the species classed by Stevens as belonging to *Irene*, sensu Stevens, in reality belong to *Appendiculella* Hoehnel, while those of *Irenina* Stevens are true species of *Irene* Theiss. & Syd. Stevens erected his genus *Irenina* in 1927 for species devoid of mycelial setae and having neither larviform appendages nor setae on the perithecia, and selected *I. glabra* (B. & C.) Stev. as type species. From the evidence given above, this genus falls into complete synonomy with *Irene* Theiss. & Syd.

Fortunately the confusion which might still have continued with the use of the genus *Irene* in the two different senses of Theissen & Sydow, and of Stevens, has recently been obviated by the discovery in Australia that McAlpine's genus *Asteridiella* is in fact a true *Irene* in the original sense of Theissen & Sydow; as it was founded in 1897, it long antedates *Irene* in either sense.

Ciferri in a series of papers dealing with his collections in San Domingo prefers to regard all the above genera as mere sub-genera of *Meliola* Fr., and in Mycopathologia 7, 1954 he gave a long list of new combinations for species recently described under the other genera discussed above. The present writer is opposed to this view and regards these "new combinations" of Ciferri as entirely unnecessary and superfluous "name-making"; except for the few cases in which Ciferri proposed an entirely new specific epithet, these combinations have been omitted from the present work.

Key to Accepted Genera

Perithecia more or less flattened, covered by a radiate mycelial layer ..... *Amazonia*

Perithecia globose, not radiate on surface

Mycelial setae present ..... *Meliola*

Mycelial setae absent

Perithecia with setae..... *Irenopsis*

Perithecia with larviform appendages ..... *Appendiculella*

Perithecia with neither setae nor appendages *Asteridiella*

Accepted Genera and Synonomy.

(1) *Amazonia* Theissen in Ann. Mycol. Berlin **11** : 499. 1913.

Syn. *Meliolaster* Doidge, Trans. Roy. Soc. South Africa, 8 : 123. 1920. (non *Meliolaster* Hoehnel).

Actinodothis H. & P. Sydow in Philipp. Journ. Sci., C. Botany, **9** : 174. 1914.

Type species: *A. psychotriae* (P. Henn.) Theiss., founded on *Meliola asterinoides* Wint. var. *psychotriae* P. Henn.

(2) *Appendiculella* von Hoehnel in Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **128** : 556. 1919.

Syn. *Irene* Stev. in Ann. Mycol. **25** : 420, 1927, non Theiss. & Syd., 1917.

Type species: *A. calostroma* (Desm.) Hoehn., based on *Sphaeria calostroma* Desm.

(3) *Asteridiella* McAlpine in Proc. Linn. Soc. New South Wales, 1897, p. 38.

Syn. *Irene* Theiss. & Syd. in Ann. Mycol. **15** : 194, 1917, non Stevens 1927.

Irenina Stev. in Ann. Mycol. **25** : 411. 1927.

Type species: *A. solani* McAlpine.

(4) *Irenopsis* Stev. in Ann. Mycol. **25** : 411. 1927.

Type species: *I. tortuosa* (Wint.) Stev., based on *Meliola tortuosa* Wint.

(5) *Meliola* Fr., emend. Bornet, Ann. Sci. Nat. III : **16** : 267. 1851.

Syn. *Meliola* Fr., Syst. Orb. Veg., 1825, p. 111.

Amphitrichum Nees ex Spreng., Pl. Crypt. Trop., 1820, p. 46, pro parte.

Sphaeria Fr., Syst. Myc. **2** : 513, 1823, pro parte.

Myxothecium Kunze ex Fr., Syst. Myc. **3** : 232. 1829.

Couturea Cast. in Fr., Summ. Veg. Scand., 1846, p. 407.

Asteridium Sacc., Syll. Fung. 1 : 49. 1882.

Type species:

For many years *Meliola amphitricha* Fr., 1828, based on *Sphaeria amphitricha* Fr., 1823, was regarded as the type species of *Meliola*. It is now impossible to assign a type specimen to this name, or an identified host plant, and as all early accounts of this "species" merely refer to a *Meliola* of formula 3111.4222, belonging to a group in which

more than 100 species are now recognised as distinct, the present writer agrees with Gaillard (1892) and with Stevens (1927) in advising the complete rejection of this specific epithet.

Toro (1952) discusses the problem of the type species of *Meliola* at length, and the present author agrees with his conclusions and that the lectotype should be *Meliola trichostroma* (Kze.) Toro, Journ. Agric. Univ. Puerto Rico **36** : 62. 1952.

VII. Species and Varieties.

As explained above, these are arranged in the following pages according to the families of the host plants on which they occur, these host families being arranged according to the system of Hutchinson. For convenience of reference the accepted species and varieties are numbered consecutively, and the figures are numbered to correspond to the species or variety which each depicts.

Host Family 1. Magnoliaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.6430	Cols. dense, crustose; hc. sublobate; sp. ellipsoid, to 75 × 34 μ	*crustacea*	(1)
3101.5340	Cols. subdense; hc. entire or angulose; sp. ellipsoid, to 57 × 26 μ	*werdermannii*	(2)

Meliola

3141.4221	Ms. 3—4-dichotomous, wide-spreading	*illicii*	(3)
31⅓3.5323	Cols. dense; hc. globose, entire	*nashii*	(4)
31⅓3.5323	Cols. loose; hc. bent cylindric	*magnoliae*	(5)
31⅓1.6324	Cols. loose, velvety; hc. ovate to clavate, entire or angulose	*diplochaeta*	(6)
3113.6342	Cols. dense; hc. ovate	*corallina*	(7)
3111.6333	Cols. thin, sub-velvety; hc. large	*hoehneliana*	(8)
3111.6322	Cols. dense; hc. cylindric	*talaumae*	(9)
3111.4322	Cols. dense, velvety; hc. small, oblong to subclavate	*micheliae*	(10)

(1) *Asteridiella crustacea* (Speg.) Hansf., Sydowia 10 : 47. 1957.
= *Meliola crustacea* Speg., Bol. Acad. Nac. Cien. Cordoba, **11** : 255. 1889.
= *Irene crustacea* (Speg.) Theiss. & Syd., Ann. Mycol. **15** : 461. 1917.
= *Irenina crustacea* (Speg.) Stev., l. c., **25** : 468. 1927.

Cols. epiphyllous, to 1.5 mm. diam., dense, smooth. Hyphae substraight to undulate, branching opposite, acute, densely reticulate and subsolid, cells mostly 15—20 × 10—12 μ. Ch. alternate, antrorse, straight or slightly bent, mostly 30—35 μ long; stc. cuneate, 6—14 μ long; hc. clavate with crenate to sublobate margin, 20—25 × 12—18 μ.

Mh. very numerous in some colonies, rare in others, mixed with ch. opposite or alternate, ampulliform, 22—30 × 8—10 μ, neck elongate P. scattered, verrucose, to 290 μ diam., surface cells rounded to obtusely conoid, to 15 μ high. Sp ellipsoid, obtuse, 4-septate, constricted, 60—75 × 30—34 μ.

On *Drimys* sp., Brazil, Puiggari, type (SPEG).

(2) *Asteridiella werdermannii* Hansf., Sydowia **10**: 51. 1957.
= *Irene werdermannii* Hansf., Sydowia **9**: 7; 1955.

Cols. hypophyllous, to 3 mm. diam., rather dense, smooth, with loose central group of perithecia. Hyphae substraight, branching opposite or irregular, acute, loosely to closely reticulate, cells mostly 30—40 × 8—10 μ. Ch. alternate, more or less antrorse, straight or bent, 25—43 μ long; stc. cylindric, 7—15 μ long; hc. globose to piriform and entire, or bent cylindric to rounded-angulose, 19—29 × 12—20 μ. Mh. separate, opposite or alternate, ampulliform, 17—25 × 8—10 μ. P. loosely gregarious, verrucose, to 350 μ diam., surface cells about 40 μ diam. and to 12 μ high, bluntly or acutely conoid-mammillate. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 50—57 × 22—26 μ.

On *Drimys winteri*, Chile, Werdermann s. n., (S, F), type; Brazil, Ule 1637-a (S); Juan Fernandez I., Skottsberg (S), parasitised, but probably belongs here; Chile, SPEG 602. (det. Spegazzini as "Meliola compacta (Lév.) Speg."); Chile, Thaxter 7405, 7404 p. p. (F).

(The type of *Asterina compacta* Lév. in Herb. Paris is now konwn as *Leveillella drymidis* (Lév.) Theiss. & Syd.).

(3) *Meliola illicii* (Cif.) Hansf., Sydowia **9**: 42. 1955.
= *Meliola magnoliae* Stev. var. illicii Cif., Ann. Mycol. Berlin, **31**: 147. 1933.

Cols. hypophyllous, dense, velvety, to 5 mm. diam. or widely confluent. Hyphae substraight to flexuous, branching opposite or irregular at varying angles, closely reticulate-interwoven, cells mostly 20—30 × 7—8 μ. Ch. alternate or less than 1 % opposite, subantrorse, straight or bent, 17—24 μ long; stc. cylindric, 3—7 μ long; hc. entire, elliptic to piriform, widely rounded at apex, 11—17 × 8—12 μ. Mh. mixed with ch., opposite or alternate, 15—20 × 7—9 μ, Ms. numerous, scattered, to 280 μ high, 3—4-dichotomous with widely spreading branches, 1-ry to 50 μ, 2-ry to 100 μ, 3—4-ry to 50 μ long. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 43—49 × 18—20 μ.

On *Illicium parviflorum*, San Domingo, Ciferri 2846 (S), Ciferri, Mycofl. doming. exs. 162 (both parts of the type collection).

(4) *Meliola nashii* Hansf., Proc. Linn. Soc. London **165**: 174. 1955.

Cols. epiphyllous, dense, to 4 mm. diam. Hyphae substraight, branching opposite, acute, closely reticulate and becoming nearly

solid in centre, cells mostly 15—20 × 7—9 μ. Ch. alternate or to about 5% opposite, antrorse, straight, 14—19 μ long; stc. cylindric., 3—6 μ long; hc. globose, entire, 10—13 μ diam. Mh. mixed with ch. in centre of colony, opposite or alternate, ampulliform, 15—20 × 7—9 μ. Ms. thinly scattered, straight, simple and obtuse, or 2—4-dentate to 7 μ, up to 520 × 8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 45—52 × 20—22 μ.

On *Magnolia glauca*, USA, Mississipi, Earle s. n. (F); Florida, Sturgis in F; Georgia, Tracy in CUP; On *M. grandifolia*, U.S.A., Florida, Ravenel, Fung. Amer. 83; Louisiana, Langlois 1169 (CUP); Alabama, Carver 376 (FLS); — On *M. virginiana*, Florida, Nash, Plants of Florida 1993, type. On *M.* sp., Florida, Thaxter 7377, 7356, 7524 (F).

(5) *Meliola magnoliae* Stev., Illinois Biol. Monogr. 2 : 55. 1916.

Cols. hypophyllous, thin, 3—20 mm. diam. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 25—45 × 5—7 μ. Ch. alternate or about 5% opposite, usually bent, 23—35 μ long; stc. cylindric, 5—11 μ long; hc. bent cylindric, apex rounded or slightly attenuate, 17—25 × 6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 6—7 μ. Ms. few, scattered, substraight, simple and acute, or 2—3-dentate to 15 μ, up to 700 × 8—10 μ. P. scattered, verrucose, to 200 μ diam. Sp. cylindric to subellipsoid, rather deeply constricted, 4-septate, obtuse, 45—52 × 19—22 μ.

On *Magnolia portoricensis*, Porto Rico, Stevens 4738, type (FLS).

(6) *Meliola diplochaeta* Syd. in Leafl. Philipp. Bot., 5 : 1536. 1912.

Cols. hypophyllous, 10—20 mm. diam., velvety. Hyphae undulate, branching irregular at wide angles, lossely interwoven-reticulate, cells mostly 30—45 × 6—8 μ. Ch. alternate, usually more or less bent, 25—40 μ long; stc. cylindric, 9—25 μ long, occasionally 1-septate; hc. ovate-clavate or sometimes rounded-angulose, 17—24 × 10—14 μ Mh. mixed with ch., alternate, ampulliform, 20—28 × 6—8 μ. Ms. numerous, biform: (a) scattered on mycelium, 1000—1750 × 6—11 μ, simple and acute, or more often 2—4-dentate to 10 μ, (b) grouped around P., up to 500 μ long, usually dentate. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 62—68 × 26—29 × 20—24 μ.

On *Talauma villariana*, Philippines, PBS 12790 (type), 17325, 28333, 28904, 27771, 30594.

In the original description the (b) setae were described as arising from the perithecia, and the spores as 50—56 × 22—24 μ.

(7) *Meliola corallina* Mont. in Gay, Nat. Hist. Chile 7 : 472. 1850.
= *Dothidea corallina* Mont., Ann. Sci. Nat. II : 3 : 347. 1835.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae substraight, branching opposite or irregular at varying angles, closely reticulate, cells mostly 20—25 × 7—9 μ. Ch. alternate, subantrorse, straight, 24—37 μ long; stc. cylindric to cuneate, 7—25 μ long; hc. globose, cylindric or piriform, entire, 17—24 × 9—15 μ. Mh. few, mixed with ch., conoid to ampulliform, 15—25 × 7—10 μ. Ms. few, scattered, substraight, simple, obtuse or acute, to 500 × 9—11 μ. P. subaggregate in centre of colony, verrucose, to 300 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 55—64 × 23—28 × 18—20 μ.

On *Drimys confertiflora*, Juan Fernandez I. (S, ex Montagne, leg. Bertero, apparently the type of *Dothidea corallina*; colonies hyphophyllous).

On *Drimys winteri* var. *chilensis*, Chile, *Gay* in P, type; Lechler (S, K, with cols. amphigenous); *Werdermann* 1736 (S, F); SPEG 603; Brazil, Ule 1637 (S); Chile, Thaxter 7403 (F).

In some colonies the ch. are up to 3 % opposite, hence the formula has been given above as 3113. and not 3111., though no opposite ch. were observed in the type specimen, from which the description above has been drawn up. Stevens (1928) included here *Asterina compacta* Lév., but the type of this belongs to *Leveillella drymidis* (Lév.) Theiss. & Syd.

(8) **Meliola hoehneliana** Hansf. comb. nov.

= *Meliola corallina* Mont. var. *javanica* Hoehn., Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Klasse **118** : 1172. 1909.

Cols. epiphyllous, thin, slightly velvety, to 3 mm. diam. Hyphae substraight to undulate, braching opposite, acute, loosely reticulate-radiating, cells mostly 30—35 × 9—10 μ. Ch. alternate, antrorse, straight or bent, 30—40 μ long; stc. cylindric to cuneate, 10—18 μ long; hc. subglobose to piriform, entire, often bent, 18—27 × 15—20 μ. Mh. separate in centre of colony, alternate, opposite, or sometimes ternate, ampulliform, 20—25 × 9—11 μ. Ms. scattered, straight or slightly flexuous, simple, acute when fully mature, to 650 × 10—11 μ. P. scattered, verrucose, to 280 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 50—65 × 19—23 × 14—17 μ.

On *Magnolia obovata*, Java, Von Hoehnel, type (K).

(9) *Meliola talaumae* Hansf., Reinwardtia **3** : 90. 1954.

Cols. mostly hypophyllous, dense, to 2 mm. diam. Hyphae substraight to slightly flexuous, branching opposite or irregular at wide angles, becoming almost solid in centre, cells mostly 15—25 × 7—8 μ. Ch. alternate, subantrorse, usually slightly bent, 20—35 μ long; stc. cylindric, 5—12 μ long; hc. cylindric with rounded apex, often bent, 16—25 × 9—12 μ. Mh. few, mixed with ch., conoid to ampulliform, 20—28 × 7—10 μ, neck elongate. Ms. grouped around P., substraight, simple, acute, to 450 × 10—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, 57—65 × 28—30 μ.

On *Talauma* sp., Borneo, Clemens 28628, type (BO).

(10) *Meliola micheliae* Hansf., Proc. Linn. Soc. London, **158**: 34. 1946.

Cols. hypophyllous, dense, velvety, to 5 mm. diam. Hyphae sinuous to flexuous, branching close, irregular, at wide angles, closely reticulate, cells mostly 15—25 × 6—9 μ. Ch. alternate, spreading, often bent, 17—25 μ long; stc. cylindric, 3—9 μ long; hc. cylindric to subclavate, entire, often bent, 12—19 × 9—11 μ. Mh. mixed with ch., alternate or unilateral, ampulliform, 15—22 × 7—9 μ. Ms. numerous, scattered, straight to somewhat flexuous, but not uncinate, simple, acute, to 500 × 7—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—47 × 18—22 μ.

On *Michelia fuscata*, Ceylon, Herb. Peradeniya s. n., type.

Host Family 3. Schizandraceae.

(11) *Meliola kadsurae* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 55. 1941.

Cols. amphigenous, thin, to 3 mm. diam. Hyphae straight or slightly undulate, branching usually opposite, cells 25—41 × 9—14 μ. Ch. alternate, often bent, 30—45 μ long; stc. cylindric to cuneate, 9—21 μ long; hc. oblong, subglobose or usually angulose to shallowly lobed, 20—30 × 17—23 μ. Mh. mixed with ch., 16—30 × 9—14 μ. Ms. not numerous, mostly grouped around P., straight or slightly bent, simple, obtuse, to 780 × 11—14 μ. P. loosely grouped in centre of colony, verrucose, to 225 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 53—60 × 16—25 μ.

On *Kadsura japonica*, Formosa, Yamamoto, type.

No specimen has been available to me for examination, and the above description is condensed from Yamamoto's original.

Host Family 8. Annonaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4220	Cols. thin; hc. subglobose to angulose	*subglabroides*	(12)

Meliola

3133.3221	Cols. thin, subvelvety; hc. small, subglobose; ms. 2—4-dentate	*canangae*	(13)
3123.4231	Cols. dense; hc. clavate-cylindric, entire; ms. obtuse, tortuous-coiled	*uvariicola*	(14)
3122.4231	Cols. dense, velvety; hc. subglobose; ms. bent to uncinate, obtuse	*polyalthiae*	(15)
31⅓3.4232	Cols. thin, subvelvety; hc. oblong to sublobate; ms. obtuse or dentate.....	*varicuspis*	(16)
31⅓3.4221	Cols. thin, velvety; hc. small, globose; ms. obtuse, acute or 2-dentate	*maitlandii*	(17)
31⅓1.6333	Cols. dense, velvety; hc. piriform to angulose; ms. acute or dentate.....	*artabotrydis*	(18)

3113.5231	Cols. dense, velvety; hc. large, ovatepiriform; ms. acute or obtuse	*ramicola*	(19)
31½1.5332	Cols. dense; hc. ovate to oblong; ms. obtuse, straight or arcuate	*xylopiae*	(20)
31½1.5231	Cols. thin; hc. smaller, globose to ovate; ms. substraight to wide hamate, obtuse or subacute	*xylopiae* var. *leonensis*	(21)
3112.4223	Cols. dense; hc. small, oblong; ms. acute	*jahnii*	(22)
3111.5331	Cols. dense; hc. narrow ovate; ms. few, obtuse	*kuprensis*	(23)
3111.5223	Cols. subdense, velvety; hc. oblong to clavate, angulose; ms. acute	*borneensis*	(24)
3111.5333	Cols. dense, velvety; hc. oblong to clavate, entire; ms. acute	*borneensis* var. *ugandae*	(25)
3111.52×2	Cols. thin; hc. stellate-lobate; ms. few, acute	*lagunensis*	(26)
3111.4323	Cols. dense, subvelvety; hc. oblong to clavate, entire; ms. obtuse to subacute	*golaensis*	(26a)
3111.4234	Cols. thin; hc. subglobose to clavate; ms. acute	*uvariae*	(27)
3111.4221	Cols. very thin; hc. globose; ms. obtuse; hyphae with long cells	*popowiae* var. *tenuis*	(28)
3111.3222	Cols. thin; hc. globose to piriform; ms. few, obtuse to subacute	*popowiae*	(29)
3111.3221	Cols. thin; hyphae with long cells; hc. cylindric-clavate; ms. obtuse	*popowiae* var. *cleistopholidis*	(30)
3111.3221	Cols. thin; hyphae with long cells; hc. subglobose to piriform; ms. obtuse	*popowiae* var. *monodorae*	(31)
3111.3221	Cols. subdense; hyphae crooked; hc. subglobose to piriform; ms. obtuse	*annonacearum*	(32)
3111.3221	Cols. thin; hyphae straight; hc. ovate to globose; ms. clavulate	*annonae*	(33)
3111.3221	Cols. thin, velvety; hyphae crooked; hc. ovate to oblong; ms. obtuse	*cleistopholidis*	(34)

(12) *Asteridiella subglabroides* Hansf., Sydowia **10**: 60. 1957.

Cols. mostly epiphyllous, thin to subdense, to 5 mm. diam. Hyphae sinuous to flexuous, branching opposite or irregular at wide angles, cells 20—25 × 6—8 μ. Ch. alternate, antrorse or spreading, straight or bent, 17—26 μ long; stc. cylindric to cuneate, 4—11 μ long; hc. subglobose and entire, or from rounded-angulose to shallowly lobate, 12—17 × 10—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—22 × 6—8 μ. P. loosely scattered, verrucose, to 170 μ diam., surface cells rounded to subconoid, to 15 μ high. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 36—43 × 17—19 μ.

On *Annonaceae* indet., British Guiana, Stevens 669 (K, FLS), type.

This was reported by Stevens & Tehon, Mycologia 18: 1, 1926, as *Irenina glabroides* Stev., of which the type is on *Piperaceae*.

(13) *Meliola canangae* Stev. ex Hansf., Sydowia Beih. **1** : 101. 1957.

Cols. epiphyllous, thin, subvelvety, to 2 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite at wide angles, becoming closely interwoven-reticulate, cells mostly 20—25 × 4½—6 μ. Ch. alternate or to 15 % opposite, spreading or subantrorse, often bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, entire, often bent, 8—11 × 7—8 μ. Mh. separate, opposite or alternate, ampulliform, 15—21 × 6—7 μ. Ms. thinly scattered and grouped around P., straight, to 230 × 8—9 μ, apex 2-4-dentate to 12 μ. P. scattered, verrucose, to 140 μ. diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—39 × 13—15 × 11—12 μ.

On *Cananga odorata*, Philippines, PBS 25685, type (FLS).

(14) *Meliola uvariicola* Hansf., Proc. Linn. Soc. London, **157** : 24. 1945.

Cols. epiphyllous, dense, subcrustose, 1—2 mm. diam., rarely also hypophyllous. Hyphae substraight, branching opposite, often rectangular, closely reticulate, cells mostly 20—25 × 8—9 μ. Ch. alternate or opposite, spreading, straight or slightly bent, 16—27 μ long; stc. cylindric, 3—10 μ long; hc. clavate to cylindric, widely rounded at apex, entire, 10—15 × 8—12 μ. Mh. separate or mixed with few ch., opposite or alternate, conoid to ampulliform, 18—21 × 8—10 μ. Ms. few to numerous, mostly grouped around P., to 180 × 10—12 μ, simple, obtuse, apex tortuous to closely coiled. P. closely aggregate in centre of colony, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 41—47 × 15—17 μ.

On *Uvaria bukobensis*, Uganda, Hansford 2674 (type), 3286; — On *Popowia mabirensis*, Uganda, Hansford 3571, 3512. — On *Uvariodendron angustifolia*, Gold Coast, Hughes in IMI 44581, 44676.

(15) *Meliola polyalthiae* Hansf., Sydowia **9** : 73. 1955.

Cols. mostly hypophyllous, to 2 mm. diam., dense, crustose, velvety. Hyphae substraight, branching opposite at wide angles, closely reticulate (in hypophyllous clonies the hyphae irregularly flexuous), cells mostly 10—20 × 7—8 μ. Ch. almost entirely opposite, often antrorse-bent, 10—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 8—11 μ diam. Mh. mixed with ch., few to numerous, conoid to ampulliform, 13—16 × 7—8 μ. Ms. numerous, scattered, simple, obtuse, to 290 × 9—11 μ, bent to uncinate in upper part. P. in close central group, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46 × 13—15 μ.

On *Polyalthia sumatrana*, Borneo, Forest Dept. A 2103 (type), A 2106, A 2118 (K).

(16) *Meliola varicuspis* Stev. & Tehon, Mycologia **18** : 7. 1926.

Cols. amphigenous, large, thin to subdense, velvety. Hyphae crooked, branching opposite at wide angles, loosely to closely reticulate, cells mostly 12—20 × 5—7 μ. Ch. alternate or to 2 % opposite,

spreading or subantrorse, straight or curved, 13—24 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, piriform, or rounded-angulose to sublobate, often bent, 10—17 × 9—12 μ. Mh. mostly on separate hyphae, opposite or alternate, ampulliform, 20—23 × 7—9 μ. Ms. scattered, numerous, straight, simple and obtuse, or more often 2—4-dentate to 8 μ, up to 460 × 7—8 μ. P. subaggregate in centre of colony, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—41 × 15—17 μ.

On *Annonaceae* indet., Costa Rica, Stevens 132, type (FLS).

(17) *Meliola maitlandii* Hansf., Proc. Linn. Soc. London, **157** : 177. 1946.

Cols. epiphyllous, rarely also hypophyllous, thin, subvelvety. Hyphae straight, cells 25—40 × 5—7 μ, branching opposite, acute, loosely reticulate. Ch. opposite or alternate, distant, straight, spreading or subantrorse, 14—18 μ long; stc. cylindric, 3—5 μ long; hc. subglobose, entire, 10—14 × 9—11 μ. Mh. mixed with ch., alternate or opposite, 18—23 × 7—9 μ, neck elongate. Ms. numerous, straight, simple, acute, obtuse or 2-dentate to 10 μ, up to 280 × 6—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—43 × 13—15 μ.

On *Popowia maitlandii*, Uganda, Hansford 2640, type.

(18) *Meliola artabotrydis* Hansf., Journ. Linn. Soc. London **51** : 538. 1938.

Cols. amphigenous, dense, velvety, to 3 mm. diam. Hyphae substraight, branching opposite at acute angles, closely reticulate, cells mostly 20—30 × 8—10 μ. Ch. alternate, subantrorse or spreading, straight or slightly bent, 23—28 μ long; stc. cylindric, 7—10 μ long; hc. oblong or bent, rounded at apex, rarely slightly rounded-angulose, 15—19 × 10—14 μ. Mh. mixed with ch., numerous in some parts of the colonies, rare in others, opposite, ampulliform, 20—30 × 7—9 μ. Ms. numerous, simple and acute, or 2—5-dentate to 9 μ, up to 750 × 10—12 μ, straight. P. scattered, verrucose, to 230 μ diam., each on a radiate subiculum of non-hyphopodiate hyphae. Sp. ellipsoid, obtuse, 4-septate, constricted slightly, 56—63 × 23—28 μ.

On *Artabotrys* spp., Uganda, Hansford 2296 (type), 2019, 2506, 2594, 2879, 3010, 3067, 3396, 3446.

(19) *Meliola ramicola* Hansf., Journ. Linn. Soc. London, **51** : 644. 1938.

Cols. epiphyllous and on young twigs, dense, velvety, to 5 mm. diam. Hyphae straight, branching opposite, acute, closely reticulate, cells mostly 15—30 × 7—8 μ. Ch. alternate or less commonly opposite, antrorse, straight or bent, 19—27 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. subglobose to piriform, entire, 14—19 × 11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24 × 8—9 μ. Ms. numerous, scattered, simple, straight, obtuse or acute,

to 280 × 11—13 μ. P. scattered, verrucose, to 210 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—52 × 16—19 μ.

On *Uvaria* spp., Uganda, Hansford 2018 (type), 1919, 2316, 3068, 3289, 3500; — On *Guatteria candolleana*, Brazil, Ule 2203 S, F), with mh. elongate to 38 × 8—11 μ, and ms. to 400 × 9—11 μ; this specimen was previously published by Rehm (1900) as *M. malacotricha*.

(20) *Meliola xylopiae* Stev., Ann. Mycol. **26**: 257. 1928.

Cols. amphigenous, dense and to 3 mm. diam. on upper surface, on lower surface thinner and to 30 mm. diam. Hyphae slightly undulate, irregularly branched at wide angles, loosely to closely reticulate, cells mostly 25—35 × 7—9 μ. Ch. alternate, spreading, often bent, 20—28 μ long; stc. cylindric, 3—5 μ long; hc. ovate to oblong, entire, 17—22 × 11—13 μ. Mh. mixed with ch., often very numerous, opposite or alternate, ampulliform, 18—32 × 7 μ, neck elongate. Ms. numerous, scattered, flexuous or broadly arcuate to uncinate above, simple, obtuse, to 400 × 7—9 μ, slightly roughened towards the apex. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 48—54 × 20—26 μ.

On *Xylopia grandiflora*, Panama, Stevens 1102, type (FLS); — On *X. frutescens*, Panama, Stevens 988 (FLS); — On *X. aromatica*, Trinidad, Baker & Dale 809 (IMI).

(21) *Meliola xylopiae* Stev. var. *leonensis* Hansf., Sydowia **11**: 62, 1958.

Cols. mostly hypophyllous, thin, to 15 mm. diam. Hyphae undulate to sinuous, branching opposite or irregular, acute to wide, loosely reticulate, cells mostly 20—30 × 6—7 μ. Ch. alternate, spreading, straight or bent, 16—22 μ long; stc. cylindric, 4—9 μ long; hc. subglobose to ovate, entire, 11—16 × 10—14 μ. Mh. mixed with ch., ampulliform, alternate or opposite, 21—27 × 7—10 μ, neck elongate. Ms. scattered and grouped around P., substraight to widely hamate-reflexed above, simple, obtuse to subacute, 200—300 × 8—10 μ. P. loosely scattered, verrucose, to 210 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 42—53 × 15—19 μ.

On *Xylopia aethiopica*, Sierra Leone, Deighton 1539, 2201, 2254.

(22) *Meliola jahnii* Toro, in Cardon & Toro, Monogr. Univ. Porto Rico, B: 2: 121. 1934.

Cols. mostly epiphyllous, to 1.5 mm. diam., dense. Hyphae straight, branching opposite at acute to wide angles, closely reticulate, cells mostly 15—25 × 7 μ. Ch. opposite, subantrorse, straight or slightly bent, 12—15 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. subglobose to oblong, entire, 9—12 × 7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18 × 7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 530 × 9—11 μ.

P. scattered, verrucose, to 140 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 36—43 × 16—18 μ.

On *Annona* sp., Venezuela, Chardon & Toro 725, type (CUP).

(23) *Meliola kuprensis* Deighton, Sydowia **11** : 108. 1958.

Cols. epiphyllous, rarely amphigenous, dense, to 1.5 mm. diam. Hyphae substraight, branching opposite wide, closely reticulate, cells mostly 12—24 × 7—9 μ. Ch. alternate, straight, antrorse, 19—25 μ long; stc. cylindric, 3—8 μ long; hc. oblong to ovate, widely rounded at apex, entire, straight, 14—18 × 8—10 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 20—28 × 7—9 μ, neck elongate. Ms. few, grouped around P., straight, simple, widely obtuse, to 180 × 9—12 μ. P. aggregate in centre, verrucose, to 225 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 44—50 × 24—25 μ.

On *Xylopia aethiopica*, Sierra Leone, Deighton 3917-a (IMI 46588-a, type), 5277, 4810, 1539 p. p., 2254 p. p., 2179 p. p. (IMI).

(24) *Meliola borneensis* Syd., Ann. Mycol. **21** : 90. 1923.

Cols. hypophyllous, velvety, subdense, to 8 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, acute, densely interwoven-reticulate, cells mostly 20—30 × 7—9 μ. Ch. alternate, antrorse or spreading, straight or bent, 21—33 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. oblong to clavate, usually somewhat irregularly rounded-angulose, often bent, 17—23 × 11—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 25—33 × 8—9 μ, neck elongate. Ms. scattered and grouped around P., straight, simple, acute, to 190 × 9—11 μ. P. scattered, verrucose, to 200 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 48—55 × 18—20 × 15 μ.

On *Uvaria* sp., Borneo, *Ramos* 2138, type (FLS); Philippines, Stevens 493; — On *U. buchholzii*, Cameroons, Zenker 2994 (K. IMI); — On *U. chamae*, Sierra Leone, Deighton 491, 1751, 1680, 1209, 1537 (IMI); in these specimens the colonies are epiphyllous, velvety, thin to dense, with spores 41—50 × 16—21 μ. — On *Papualthia lanceolata*, Philippines, Stevens 1930 (FLS). — On *Polyalthia longipes*, Java, BO 12544. — On *Polyalthia* sp., Malaya, Burkill 4130 (K), with cols. epiphyllous. — On *Melodorum latifolium*, Java, BO 1316.

(25) *Meliola borneensis* Syd. var. *ugandae* Hansf., Sydowia **10** : 64. 1957.

Cols. amphigenous, on upper surface to 2 mm. diam., dense, on lower surface thinner and to 10 mm. diam., both velvety. Hyphae substraight to undulate, cells 25—40 × 7—8 μ, branching opposite or irregular at acute angles, becoming closely interwoven-reticulate. Ch. alternate, straight or slightly bent, subantrorse, 21—35 μ long; stc. cylindric to cuneate, 7—14 μ long; hc. oblong to clavate with rounded apex, straight or bent, rarely slightly irregular, 15—23 × 10—13 μ. Mh. mixed with ch., opposite or alternate, 25—35 × 8—10 μ, neck elongate. Ms. numerous, straight, simple, acute to subacute

to 800 × 8—11 μ. P. scattered, verrucose, to 220 μ diam., often with mycelial setae arising from around the base. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 46—54 × 19—23 × 12—15 μ.

On *Popowia maitlandii*, Uganda, Hansford 2303, type.

(26) **Meliola lagunensis** Hansf., sp. nov.

Cols. epiphyllous, thin, to 1 mm. diam. Hyphae undulate, branching alternate at wide angles, loosely to rather closely reticulate, cells mostly 15—25 × 7—9 μ. Ch. alternate, antrorse or spreading, often bent, 30—43 μ long; stc. cuneate, cylindric or irregular above, straight or bent, 10—17 μ long; hc. irregularly stellate-lobate, versiform, 15—25 × 15—25 μ. Mh. separate, narrow ampulliform, alternate, 25—35 × 7—9 μ, neck elongate. Ms. grouped around P, few, straight, simple, acute, to 450 × 9—10 μ. P. scattered, verrucose, immature. Sp. ellipsoid, obtuse, 4-septate, constricted, 46—54 × 18—20 μ.

On *Uvaria* sp., Philippines, Stevens 493 p. p. (type), mixed with *Meliola borneensis* (FLS).

(26-a) *Meliola golaensis* Deighton, Sydowia **11** : 105. 1958.

Cols. epiphyllous, dense, loosely velvety, to 1 mm. diam. Hyphae substraight, branching opposite, wide, closely reticulate, cells 10—18 × 7—10 μ. Ch. alternate, slightly antrorse to spreading, straight, 16—28 μ long; stc. cylindric, 4—7 μ long; hc. cylindric, ovate or clavate, entire, straight, 12—18 × 9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—26 × 7—11 μ. Ms. few, scattered, straight or sometimes slightly bent or geniculate, simple, obtuse to subacute, to 710 × 7—8 μ. P. scattered, slightly tuberculate (cells to 10 μ high), to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—47 × 19—22 μ.

Xylopia quintasii, Sierra Leone, Small in IMI 53146, type.

(27) *Meliola uvariae* Rehm, Philipp. Journ. Sci., C, Botany, 8 : 251. 1913. (3111.4234)

= *Meliolinopsis uvariae* (Rehm) Beeli, Bull. Jard. Bot. Bruxelles, 7 : 119, 1920.

Cols. ephiphyllous, thin, arachnoid, to 8 mm. diam. Hyphae straight to slightly undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 25—35 × 7—9 μ. Ch. alternate, usually straight, subantrorse, 20—28 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. subglobose to wide clavate, entire, 13—18 × 11—15 μ, rarely angulose to sublobate. Mh. few, mixed with ch., alternate or opposite, 18—26 × 7—9 μ. Ms. not numerous, scattered, straight, simple, acute, to 1100 × 8—10 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—48 × 16—18 μ.

On *Uvaria* sp., Philippines, Baker, Fungi malay. 46 and PBS 680, both parts of the type collection; PBS 1377, 2139 (S); Stevens 1848 (FLS).

Beeli's transfer to his new genus *Meliolinopsis* was due to confusion of the *Meliola* with hyper-parasites belonging to *Helminthosporium* and *Phaeophragmeriella*.

(28) *Meliola popowiae* Doidge var *tenuis* Hansf. & Deight., Mycol. Paper, IMI, **23** : 2. 1948.

Cols. epiphyllous, thinner than in type, to 4 mm. diam. Hyphae straight to slightly undulate, branching opposite at varying angles, very loosely reticulate, cells mostly 30—40 × 6—8 μ. Ch. alternate or more scattered (many cells with none), subantrorse or spreading, straight or slightly bent, 19—23 μ long; stc. cylindric, 7—10 μ long; hc. subglobose, entire, 11—15 μ diam. Mh. separate, opposite or alternate, narrow ampulliform, 15—20 × 6—7 μ. Ms. scattered, mostly grouped around P., straight, simple, obtuse, to 220 × 7—8 μ. P. loosely scattered, each on a disc, up to 130 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—41 × 14—16 μ.

On *Uvaria afzelii*, Sierra Leone, Deighton 966 (type), 1399, 1913, 1579 (IMI).

(29) *Meliola popowiae* Doidge, Trans. Roy. Soc. South Africa, **9** : 142. 1920.

Cols. epiphyllous, effuse, thin, to 6 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 10—30 × 6—8 μ. Ch. alternate or more scattered, very rarely opposite, subantrorse or spreading, usually straight, 12—20 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. globose to piriform, entire, 10—15 × 9—12 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 15—22 × 6—9 μ. Ms. few, mostly grouped around P., straight or slightly flexuous, simple, obtuse to subacute, to 500 × 9—10 μ. P. scattered, verrucose, to 200 μ diam., surface cells rounded to obtuse conoid. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 35—40 × 13—16 μ.

On *Popowia caffra*, South Africa, PRET 8882, 8990, 11587, 11607, 12435.

Ciferri in Mycopathologia 7 : 176, 1954 reports this species in San Domingo, on *Annona reticulata*, Ciferri 2780, and on *A. montana*, *Ekman* 4217; neither of these specimens has been available to me for examination, but I deem it highly unlikely that they have been determined correctly. For Ciferri 2762 on *A. glabra* see below under *Meliola annonae*.

(30) *Meliola popowiae* Doidge var. *cleistopholidis* Hughes, Mycol. Paper, IMI **48** : 57. 1952.

Cols. amphigenous, mostly epiphyllous, thin, to 7 mm. diam. Hyphae substraight to flexuous, branching opposite at wide angles, loosely reticulate, cells mostly 25—35 × 5—7 μ. Ch. alternate, spreading or subantrorse, straight, 20—30 μ long; stc. cylindric to cuneate, 8—13 μ long; hc. cylindric to clavate, entire, 11—19 × 9—12 μ.

Mh. separate, opposite, ampulliform, 15—23 μ long. Ms. mostly around P., straight or bent, simple, obtuse, to 250 × 6—8 μ. P. scattered, to 140 μ diam., surface cells protuberant. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 34—40 × 14—18 μ.

On *Cleistopholis patens*, Gold Coast, Hughes in IMI 43583, type.

(31) *Meliola popowiae* Doidge var. **monodorae** Hansf., comb. n.
= *Meliola monodorae* Hansf., Journ. Linn. Soc. London, 51 : 542. 1938.

Cols. epiphyllous, thin, effuse. Hyphae straight or slightly undulate, branching opposite, acute, loosely reticulate, cells 20—35 × 6—7 μ. Ch. alternate or more scattered, antrorse, straight, 16—24 μ long; stc. cuneate, 3—7 μ long; hc. piriform to subglobose, entire, 12—15 × 10—12 μ. Mh. mixed with ch. or in some collections separate, opposite, ampulliform, 15—22 × 6—7 μ. Ms. mostly grouped around P., simple, straight or bent, to 220 × 6—8 μ, obtuse. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40 × 13—16 μ.

On *Monodora gibsonii*, Uganda, Hansford 2243, type. — On *M. myristica*, Gold Coast, Deighton CB 894 (IMI).

Hansford 3550 on *Monodora myristica*, Uganda, differs from the above in more elongate hyphopodia to 30 μ; stc. cylindric to cuneate, 7—15 μ long; hc. ovate to piriform, entire, 15—20 × 9—12 μ, Mh. separate, opposite, 10—16 × 6—8 μ. Ms. mostly around P., simple, flexuous, obtuse, to 200 × 7—8 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45 × 17—22 μ.

(32) *Meliola annonacearum* Stev., Ann. Mycol. 26 : 245. 1928.

Cols. epiphyllous, thin to subdense, to 4 mm. dian. Hyphae very crooked, branching irregular at wide angles, rather closely interwoven-reticulate, cells mostly 15—25 × 5—7 μ. Ch. alternate or more scattered, spreading, straight or bent, 16—22 μ long; stc. cylindric, 2—7 μ long; hc. subglobose to piriform, entire, 11—15 × 9—13 μ. Mh. separate, conoid to ampulliform, mostly alternate, 12—16 × 6—7 μ. Ms. scattered, straight or slightly bent, simple, obtuse, to 220 × 6—9 μ. P. scattered, to 130 μ diam., almost smooth. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—38 × 14—16 μ.

On *Annona* sp., Ecuador, Stevens 320, type (FLS).

Ciferri (1954) reports this species from San Domingo on *Oxandra lanceolata*, Ekman 3221, but I have had no opportunity of examining this specimen.

(33) *Meliola annonae* Stev., Ann. Mycol. 26 : 240. 1928.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae straight or slightly flexuous, branching opposite at wide angles, loosely reticulate, cells mostly 25—40 × 5½—7 μ. Ch. alternate or more scattered, subantrorse, straight, 14—19 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose to wide ovate, entire, 10—13 × 8—11 μ. Mh. few,

mostly separate, opposite or alternate, ampulliform, 14—20 × 7—8 μ. Ms. few, scattered, straight or slightly bent, to 220 × 6—8 μ, simple, obtuse to clavate, the apex often swollen to 7—8 μ. P. scattered, slightly verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—33 × 13—15 × 11—13 μ.

On *Annona purpurea*, Panama, Stevens 342, type (FLS). — On *A. glabra*, San Domingo, Ciferri 2762 (S), with spores 29—37 × 14—16 μ. — On *A. palustris*, Sierra Leone, Deighton 2105, 2097 (IMI), the setae not clavulate.

(34) *Meliola cleistopholidis* Hansf., Recueil I.N.E.A.C., 2 : 38. 1945.

Cols. hypophyllous, subdense, velvety, to 10 mm. diam. or widely confluent. Hyphae very crooked, often geniculate-bent, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—45 × 5—6.5μ. Ch. alternate or more scattered, antrorse or spreading, straight or bent, 11—28 μ long; stc. cylindric, usually 2—5 μ long, sometimes up to 20 μ; hc. ovate to clavate-cylindric, straight or bent, entire, 8—12 × 7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—19 × 6—7 μ. Ms. numerous, scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 220 × 6—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—34 × 12—14 μ.

On *Cleistopholis verschuenii*, Congo Belge, Hendrickx 2421, type.

Host Family 10. Monimiaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella			
2201.5340	Cols. dense; hc. lobate; app. to 40 μ	*kiraiensis*	(35)
Asteridiella			
2101.5240	Cols. thin to subdense; hc. lobate	*daphnandrae*	(36)
3101.5340	Cols. dense; hc. clavate, entire	*hedycaryae*	(37)
Meliola			
2111.6332	Cols. dense, velvety; hc. lobate; ms. acute....	*doryphorae*	(38)
31⅓1.5334	Cols. thin, subvelvety; hc. ovate to piriform, entire.....	*megalochaeta*	(39)
3112.4221	Cols. dense, velvety; hc. subglobose; ms. acute.	*siparunae*	(40)
3113.4333	Cols. dense, velvety; hc. subglobose to clavate; ms. acute; sp. 40—45 × 16—21 μ	*rigida*	(41)
3111.5233	Cols. dense, velvety; hc. clavate to oblong; ms. acute; sp. 46—54 × 16—19 μ	*rigida* var. *ugandae*	(42)
3111.3222	Cols. thin; hc. clavate or lobate	*mollinediae*	(43)

(35) **Appendiculella kiraiensis** (Yamam.) Hansf., comb. n.
= *Irene kiraiensis* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31** : 47. 1941.

Cols. amphigenous, dense, to 5 mm. diam. or sometimes confluent. Hyphae more or less undulate, branching opposite at wide angles,

closely reticulate, cells about 25 × 7—8 μ. Ch. alternate, subantrorse, straight or bent, 25—45 μ long; stc. cylindric, 7—20 μ long; hc. irregularly lobate, versiform, 13—24 × 13—18 μ. Mh. few, mixed with ch., alternate, 18—24 × 8—9 μ, ampulliform. P. in loose central group, to 450 μ diam.; surface cells conoid to mammillate, or some growing out into obtuse, continuous, translucent brown, transversely striate appendages, to 40 μ long, 30 μ diam. at base, tapering to 15 μ at bent, obtuse apex. Sp. bent ellipsoid, ends attenuate but obtuse, 3-septate, constricted, 52—59 × 18—22 μ.

On *Doryphora sassafras*, New South Wales, Fraser 26, 178; — On *Atherosperma moschata*, Victoria, Fraser 193.

The description above is that of the specimens quoted; for Yamamoto's description of the type on *Actinodaphne* (*Lauraceae*) in Formosa, see below.

(36) **Asteridiella daphnandrae** Hansf., comb. nov.

= *Irenina daphnandrae* Hansf., Proc. Linn. Soc. N. S. W., 78 : 64. 1953.

Cols. amphigenous, thin to subdense, to 2 mm. diam. or confluent. Hyphae slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—25 × 7 μ. Ch. alternate, subantrorse, straight or bent, 18—28 μ long; stc. cylindric, 5—12 μ long; hc. irregularly lobate, 12—17 × 11—16 μ, Mh. mixed with ch., alternate, ampulliform, 15—20 × 7—9 μ. P. scattered or in loose central group, to 330 μ diam., surface cells obtusely conoid to mammillate, to 20 μ high. Sp. bent ellipsoid or subfusoid, ends obtusely attenuate, 3-septate, constricted, 44—52 × 16—19 μ.

On *Daphnandra micrantha*, New South Wales, Fraser 132 (type), 207. (Herb. Dept. Agric., N. S. W.).

(37) *Asteridiella hedycaryae* Hansf., Sydowia **10** : 48. 1957.

= *Irenina hedycaryae* Hansf., Proc. Linn. Soc. N. S. W. **78** : 65. 1953.

Cols. amphigenous, mostly epiphyllous, dense, subcrustose, to 3 mm. diam. or confluent. Hyphae straight or slightly undulate, branching opposite at acute angles, closely radiating-reticulate, cells mostly 20—40 × 7—10 μ. Ch. alternate, antrorse, straight or bent, 30—37 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. cylindric to clavate, widely rounded at apex, entire often slightly bent, 22—28 × 11—18 μ. Mh. few, mixed with ch., opposite or unilateral, ampulliform, 18—28 × 8—11 μ, often around edge of colony. P. in loose to close central group, each on solid disc of radiating ex-hyphpodiate hyphae up to 180 μ diam., flattened-globose, to 320 μ diam. and about 200 μ high, rough; surface cells rounded, only slightly projecting. Sp. oblong to subellipsoid, straight or slightly bent, obtuse, 4-septate, constricted, 54—59 × 21—24 μ.

On *Hedycarya* sp., Victoria, type in Herb. Melbourne Univ.

(38) *Meliola doryphorae* Hansf., Proc. Linn. Soc. N. S. W. 81 : 23. 1956.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., dense, velvety. Hyphae substraight to slightly undulate, branching mostly opposite, acute, closely reticulate and almost solid, cells mostly 20—30 × 6—9 μ. Ch. alternate, subantrorse, usually irregularly bent, 30—45 μ long; stc. cylindric to cuneate, 10—19 μ long; hc. deeply and irregularly lobate, often bent, versiform, 20—28 × 18—25 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—27 × 7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 400 × 8—10 μ. P. in central group, verrucose, to 220 μ diam. Sp. oblong, obtuse, 3-septate, rather strongly constricted, 59—68 × 22—24 μ.

On *Doryphora sassafras*, Queensland, Langdon 579, type. (Herb. Botany Dept., Univ. of Queensland).

(39) *Meliola megalochaeta* Syd., Philipp. Journ. Sci. 21 : 135. 1922.

Cols. hypophyllous, thin, to 10 mm. diam. or widely confluent, subvelvety. Hyphae substraight, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 30—40 × 8—10 μ. Ch. alternate or more scattered, spreading, straight or bent, 25—35 μ long; stc. cylindric, 5—12 μ long; hc. wide ovate to piriform, entire, 18—24 × 12—16 μ. Mh. numerous, mixed with ch., alternate, ampulliform, 22—29 × 9—11 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse to acute, those around P. often 2—3-dentate to 10 μ, 300—1600 × 10—13 μ. P. scattered, verrucose, to 220 μ diam., each on loose radiate subiculum of ex-hyphopodiate hyphae to 150 μ long. Sp. ellipsoid, to oblong, obtuse, 4-septate, constricted, 50—57 × 20—23 × 16—18 μ.

On *Kibara* sp., Amboina, Robinson 2078, type (S); Borneo, Elmer 20670 (BO); — On *K. coriacea*, Java, BO 804, 4907.

(40) *Meliola siparunae* Syd., Ann. Mycol. 27 : 3. 1929.

Cols. epiphyllous, rarely also hypophyllous, 1—5 mm. diam., velvety. Hyphae substraight, branching opposite, acute to wide. densely reticulate and almost solid, cells mostly 15—25 × 7—8 μ Ch. opposite, subantrorse, straight or slightly bent, 15—20μ long; stc. cuneate, 3—5 μ long; hc. subglobose, entire, 12—15 × 10—15 μ. Mh. few, mixed with ch. in centre of colony, opposite or alternate, ampulliform, 15—20 × 7—9 μ. Ms. scattered and grouped around P., straight to slightly arcuate, simple, acute, to 280 × 10—12 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—46 × 15—19 × 11—13 μ.

On *Siparuna patelliformis*, Costa Rica, Brenes 504, type (F).

(41) *Meliola rigida* Doidge, Trans. Roy. Soc. South Africa, 5 : 736. 1916.

Cols. amphigenous, subdense, velvety, to 4 mm. diam. Hyphae substraight, branching opposite at wide angles, closely reticulate.

cells mostly 18—25 × 7—9 μ. Ch. opposite or alternate, spreading, straight or slightly bent, 14—23 μ long; stc. cylindric, 3—5 μ long; hc. subglobose, ovate or clavate-cylindric, entire, 10—17 × 8—10 μ. Mh. mixed with ch., opposite, ampulliform, 16—20 × 6—8 μ. Ms. numerous, scattered, straight, simple, acute, to 750 × 10—11 μ. P. scattered, nearly smooth, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—45 × 16—21 μ.

On *Xymalos monospora*, South Africa, PRET 1667, 1775, 8890, 8894, 8988, 11578, 11599, 11614, 11841, 12444, 17720; Kivu, Congo Belge, Hendrickx 2097.

(42) *Meliola rigida* Doidge var. *ugandae* Hansf., Sydowia **10**: 87. 1957.

Cols. amphigenous, to 5 mm. diam., dense, velvety. Hyphae somewhat flexuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—25 × 7—9 μ. Ch. alternate or very rarely opposite, spreading or antrorse-bent, 20—28 μ long; stc. cylindric, 6—14 μ long; hc. cylindric to clavate, rounded or subtruncate at apex, straight or bent, entire, 12—18 × 9—13 μ. Mh. mixed with ch., short ampulliform, 14—18 × 7—9 μ. Ms. numerous, scattered, simple, acute, almost straight, to 600 × 8—10 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—54 × 16—19 μ.

On *Xymalos monospora*, Uganda, Hansford 2673, 2843; Kivu, Congo Belge, Hansford 3339.

These specimens were formerly referred to M. *borneensis*.

(43) *Meliola mollinediae* Theiss., Broteria **12**: 24. 1914.

Cols. epiphyllous, subdense or thin, to 1 mm. diam. or numerous and widely confluent. Hyphae substraight to flexuous or sinuous, branching opposite at wide angles, becoming closely reticulate in centre, cells mostly 20—25 × 6—8 μ. Ch. alternate or very rarely opposite, usually bent, 16—20 μ long, subantrorse or spreading, sometimes recurved; stc. cylindric, 4—6 μ long; hc. clavate and entire, or variously bent and angulose to sublobate, 9—14 × 8—13 μ. Mh. mostly on separate hyphae but mixed with a few ch., alternate, opposite, or sometimes ternate, ampulliform, 13—21 × 7—8 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, acute, to 300 × 7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—38 × 13—16 μ.

On *Mollinedia elegans*, Brazil, *Rick* s. n., type (S).

Host Family 11. Lauraceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.5340	.....	*philippinensis*	(44)

Appendiculella

2201.5240	Cols. thin; hyphae crooked; hc. oblong to lobate; app. to 70 × 21 μ	*kiraiensis*	(45)

Irenopsis

3401.4220	Cols. thin; hyphae crooked; hc. irregular; ps. numerous, obtuse	*ocoteae*	(46)

Asteridiella

3102.42×0	Cols. subdense; hyphae straight; hc. oblong, entire.....	*sheariana*	(47)
3101.5320	Cols. subdense; hc. angulose, large	*perseae* var. *major*	(48)
3101.5320	Cols. thin to dense; hc. irregularly sublobate..	*nectandrae*	(49)
3101.5230	Cols. thin; hc. bent cylindric, entire	*calva*	(50)
3101.4320	Cols. thin; hyphae undulate to crooked; hc. angulose, large	*perseae*	(51)
3101.4230	Cols. dense; hyphae straight; hc. cylindric-conoid, entire	*calva* var. *minor*	(52)
3101.4240	Cols. dense; hyphae undulate; hc. ovate to oblong, entire.....	*fraseriana*	(53)

Meliola

2111.5222	Cols. dense, velvety; hc. lobate; ms. acute	*litseicola*	(54)
2111.4222	Cols. thin to dense; hc. ovate to conoid, small, entire; ms. obtuse	*whetzelii*	(55)
3411.6333	Cols. dense; hc. ovate-oblong, subentire; ps. obtuse, to 60 μ; ms. straight, obtuse.....	*martiniana*	(56)
3142.4331	Cols. dense; hyphae straight; hc. oblong to globose, entire, small; ms. 2-dichotomous, dentate	*calochaeta*	(57)
3131.4322	Cols. dense, subvelvety; hyphae substraight; hc. oblong, entire	*maculans*	(58)
31⅓3.5333	Cols. thin; hyphae crooked; hc. oblong, entire; ms. acute or furcate	*neolitseae*	(59)
31⅓1.5222	Cols. thin; hyphae undulate; hc. subglobose; ms. acute or dentate.....	*linderae*	(60)
31⅓1.4323	Cols. thin, subvelvety; hyphae substraight; hc. clavate-cylindric, entire; ms. obtuse or dentate	*litseae*	(61)
31⅓1.4223	Cols. thin; hyphae substraight; hc. ovoid, entire; ms. acute or dentate	*beilschmiediae*	(62)
3121.6333	Cols. dense, velvety; hyphae crooked; hc. angulose to sublobate; ms. hamate, obtuse ...	*drepanochaeta*	(63)
3121.5333	Cols. dense, velvety; hyphae undulate; hc. globose to angulose; ms. uncinate, obtuse	*uncitricha*	(64)
31½1.4223	Cols. thin, subvelvety; hyphae straight to undulate; hc. cylindric-clavate, entire; ms. biform (a) straight, (b) uncinate to coiled, all obtuse	*cumbrensis*	(65)

3112.5333	Cols. dense; hyphae straight; hc. subconoid; ms. acute	*praetervisa*	(66)
3113.5321	Cols. dense; hyphae undulate; hc. cylindric-clavate, entire; ms. acute	*misantecae*	(67)
3113.4223	Cols. thin; hyphae substraight; hc. ovate, entire; ms. acute	*dactylipoda* var. *brevipoda*	(68)
3113.4222	Cols. thin, subvelvety; hyphae substraight; hc. cylindric, entire; ms. acute	*acutiseta*	(69)
3111.6334	Cols. thin; hyphae undulate; hc. ovate to piriform; ms. acute	*beilschmiediae* var. *cinnamomi*	(70)
3111.6334	Cols. thin; hyphae straight; hc. large, ovate to clavate, entire; ms. obtuse	*magna*	(71)
3111.6333	Cols. thin; hyphae undulate to crooked; hc. subglobose to oblong, entire; ms. acute	*machili*	(72)
3111.6333	Cols. dense; hyphae straight or crooked; hc. oblong-clavate or irregular; ms. acute	*actinodaphnes*	(73)
3111.5343	Cols. thin; hyphae undulate; hc. bent, anulose; ms. acute or obtuse	*cryptocaryae*	(74)
3111.5333	Cols. thin, subvelvety; hyphae crooked; hc. subglobose to oblong, entire; ms. acute	*sempeiensis*	(75)
3111.5332	Cols. dense, velvety; hyphae undulate; hc. ovate-oblong, entire or angulose; ms. acute	*saccardoi*	(76)
3111.5332	Cols. dense, subvelvety; hyphae straight or undulate; hc. ovate-cylindric, entire; ms. obtuse to subacute	*floridensis*	(77)
31×1.43 ××	Cols. subdense; hyphae undulate; hc. oblong to piriform, entire	*tetradeniae*	(78)
3111.4223	Cols. dense, velvety; hyphae substraight; hc. subglobose to piriform, entire; ms. acute	*litseae* var. *rotundipoda*	(79)
3111.4222	Cols. thin; hyphae straight; hc. ovate to cylindric, entire; ms. acute	*ocoteicola*	(80)
3111.4222	Cols. thin; hyphae undulate; hc. elongate cylindric; ms. acute	*dactylipoda*	(81)
3111.4222	Cols. thin; hyphae straight; hc. cylindric, entire; ms. obtuse	*dactylipoda* var. *jamaicensis*	(82)
3111.42×2	Cols. thin; hyphae straight to tortuous; hc. cylindric, entire; ms. obtuse	*phoebes*	(83)
3111.4232	Cols. dense, velvety; hyphae substraight; hc. small, ovate to oblong, entire; ms. obtuse to subacute	*antioquensis*	(84)
3111.4221	Cols. thin; hyphae straight to crooked; hc. ovate; ms. acute	*philippinensis*	(85)
3111.3221	Cols. dense; hyphae undulate; hc. globose to piriform; ms. obtuse, few	*litseae-citratae*	(86)

(44) *Amazonia philippinensis* Theiss., Broteria **12**: 78. 1914.

Mycelium radiating; hyphae alternate branched, 8—9 μ thick, sinuous. Ch. alternate, cylindric-clavate, entire, 20—25 μ long, 8—10 μ wide; stc. 6 μ long. Mh. ampulliform, 22 × 7 μ. P. lenticular. 300—400 μ

diam., radiate, composed of hyphae 7–8 μ wide. Sp. 4-septate, constricted, 48—52 × 18—22 μ.

On *Ullolitsea villosa*, Philippines, Baker, type.

Specimens of this species have not been traced by the present writer.

(45) *Appendiculella kiraiensis* (Yamam.) Hansf., supra p. (91).
= *Irene kiraiensis* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31** : 47. 1941.

Cols. hypophyllous, effuse, or 2—6 mm. diam., thin, strongly adherent, sometimes confluent. Hyphae strongly undulate, branching irregular, closely interwoven-reticulate, cells 30—55 × 6—9 μ. Ch. scattered or alternate, often irregularly and strongly curved; stc. 5—23 μ long; hc. oblong, obovate or irregular, sometimes angulose or 2—3-lobate, 14—25 × 10—18 μ. Mh. few, alternate, 16—28 × 7—8 μ, P. crowded, to 320 μ diam., with 1—3 larviform appendages, rigid, often slightly bent, to 70 × 14—21 μ. Sp. fusoid, often slightly bent, obtuse to subacute, 3-septate, constricted, 46—60 × 12—20 μ.

On *Actinodaphne mushaensis*, Formosa, Yamamoto, type (not seen by the present author). — On *Cinnamomum virens*, New South Wales, Fraser 184: hc. versiform, shallowly lobate, 16—22 × 14—22 μ app. transversely striate, to 80 × 15 μ wide at apex, 30 μ wide at base, thin-walled, continuous, translucent brown; sp. 47—54 × 17—19 μ.

(46) *Irenopsis ocoteae* Stev., Ann. Mycol. **25** : 436. 1927.
= *Meliola ocoteae* Stev., Illinois Biol. Monogr. 2 : 29. 1916.

Cols. hypophyllous, thin, smooth, to 10 mm. diam. Hyphae crooked, branching opposite or irregular, acute to wide, loosely interwoven-reticulate, cells mostly 30—50 × 6 μ. Ch. alternate, antrorse, spreading or recurved, often irregularly bent, 20—35 μ long; stc. cylindric, 5—16 μ long; hc. ovate, clavate or sinuous-bent, sometimes rounded-angulose, 13—22 × 9—15 μ. Mh. mixed with ch., alternate, ampulliform, 18—22 × 7—8 μ. P. loosely scattered, slightly verrucose, to 170 μ diam.; ps. numerous, straight or slightly curved, to 85 × 8—10 μ, slightly attenuate to obtuse apex, dark brown, 2-septate, smooth, thick-walled. Sp. fusoid, often bent, with subacute ends, 4-septate, constricted, 43—50 × 13—15 μ.

On *Ocotea leucoxylon*, Porto Rico, Stevens 8428, type (FLS, K, P, S. Pret).

(47) **Asteridiella shearíana** Hansf., sp. nov.

Cols. epiphyllous, subdense, smooth, to 2 mm. diam. Hyphae straight, branching opposite at wide angles, loosely to closely reticulate, cells mostly 15—22 × 6—7 μ. Ch. opposite, with gaps on some hyphae devoid of hyphopodia, antrorse or spreading, straight or slightly bent, 13—17 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. cylindric, entire, rounded or slightly pointed at apex, 9—13 × 6—8 μ. Mh. not seen. P. scattered, verrucose, immature. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—42 × 17—19 μ.

On *Cryptocarya mannii*, Hawaii, Shear 683, type (CUP).

(48) *Asteridiella perseae* (Stev.) Hansf. var. *major* Hansf., Sydowia **10** : 58. 1957.

Cols. amphigenous, subdense, to 5 mm. diam. Hyphae on upper surface straight, with cells 25—40 × 7—8 μ, on lower surface crooked and interwoven, branching mostly opposite at wide angles, closely reticulate, Ch. alternate or more scattered, spreading or antrorse, straight or bent, 25—34 μ long; stc. cuneate, 6—10 μ long; hc. irregularly piriform or bent, the margin around the apex often crenate to sublobate, especially on upper surface, 18—24 × 14—18 μ. Mh. mixed with ch., alternate, ampulliform, 22—28 × 7—9 μ. P. scattered, verrucose, to 190 μ diam., surface cells conoid, projecting to 30 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 44—52 × 18—23 μ.

On *Persea americana*, Jamaica, Martyn in IMI 24811, type.

(49) *Asteridiella nectandrae* Hansf., Sydowia **10** : 49. 1957.

= *Irene nectandrae* Hansf., Sydowia **9** : 34. 1955.

Cols. amphigenous, to 3 mm. diam. or confluent, on upper surface small and thin, on lower surface larger and dense, sometimes causing brownish leafspots. Hyphae sinuous, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 15—25 × 6—9 μ. Ch. alternate, usually bent, antrorse or spreading, 16—35 μ long; stc. cylindric, 6—10 μ long; hc. irregular, usually bent and shallowly rounded-lobate, versiform, 12—24 × 11—19 μ. Mh. few mixed with ch., alternate or opposite, ampulliform, 14—20 × 6—8 μ. P. scattered, each on basal disc and surrounded by loose radiate subiculum, to 150 μ diam., surface cells obtusely conoid, projecting to 20 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 46—52 × 19—22 μ.

On *Nectandra* sp., British Guiana, Stevens 315, type (K, FLS), 285 p. p. (FLS). — On *N. patens*, Porto Rico, Stevens 702, 4852, 7081, 7466, 7595, 8867, 8873, 8874, 8750, 8973 (FLS).

This was reported by Stevens and Tehon as *M. glabroides*. Ciferri (1954) reports a specimen, Ekman 3299 on *Nectandra coriacea*, San Domingo, as *Irenina glabra*; this is probably the same as the above, but specimens have not become available to the present writer.

(50) *Asteridiella calva* (Speg.) Hansf., Sydowia **10** : 47. 1957.

= *Meliola calva* Speg., Bol. Acad. Cien. Cordoba **11** : 233. 1889.

= *Irenina calva* (Speg.) Stev., Ann. Mycol. **25** : 464. 1927.

Cols. hypophyllous, thin, smooth, to 5 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 25—30 × 7 μ. Ch. alternate, subantrorse or spreading, usually bent, 18—22 μ long; stc. cylindric, 4—7 μ long; hc. cylindric, often bent, entire, 13—17 × 7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—26 × 6—8 μ, neck elon-

gate. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—52 × 17—20 μ.

On *Lauraceae* indet., Brazil, Puiggari 1483, type, 1607 (SPEG).

(51) *Asteridiella perseae* (Stev.) Hansf. Sydowia **10**: 1957.

= *Meliola perseae* Stev., Illinois Biol. Monogr. 2: 17. 1916.

= *Irene perseae* (Stev.) Toro, Mycologia **17**: 140. 1925.

= *Irenina perseae* (Stev.) Stev., Ann. Mycol. **25**: 465. 1927.

Cols. mostly hypophyllous, thin, smooth, to 2 mm. diam. Hyphae undulate to crooked, branching irregular, loosely reticulate, cells mostly 20—40 × 6—8 μ. Ch. alternate, antrorse or spreading, often recurved, 25—35 μ long; stc. cylindric or cuneate, 8—15 μ long; hc. versiform, often bent, oblong or angulose, 18—28 × 10—15 μ. Mh. mixed with ch., alternate, ampulliform, 18—26 × 9—11 μ. P. scattered, rough, to 190 μ diam., surface cells obtusely conoid, to 23 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—48 × 20—23 × 15 μ. Epiphyllous colonies minute, immature, with straighter hyphae and ch.

On *Persea gratissima*, Porto Rico, Stevens 8212, type (FLS); Venezuela, Sydow, Fung. venez. 278; San Domingo, Ciferri, Mycofl. doming. exs. 265.

Sydow's Venezuelan specimen differs somewhat from the type, especially in straighter mycelium and spores 40—44 × 16—18 μ.

(52) *Asteridiella calva* (Speg.) Hansf. var. *minor* Hansf., Sydowia 10: 51. 1957.

Cols. epiphyllous, to 3 mm. diam., dense, smooth. Hyphae straight, branching opposite, acute, closely radiating-reticulate, cells mostly 15—20 × 6—7 μ. Ch. alternate, subantrorse, usually straight, 17—23 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. cylindric to subconoid, obtuse at apex, entire, straight or slightly bent, 15—20 × 8—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 17—23 × 8—7 μ. Setae none (possibly due to parasites). P. scattered, verrucose, to 220 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—45 × 16—19 μ.

On *Lauraceae* indet., Costa Rica, Spegazzini 833 (SPEG).

(53) *Asteridiella fraseriana* (Syd.) Hansf., Sydowia 10: 48. 1957.

= *Meliola fraseriana* Syd., Ann. Mycol. **35**: 27. 1937.

= *Ireniana fraseriana* (Syd.) Hansf., Proc. Linn. Soc. N. S. W. **78**: 61. 1953.

Cols. hypophyllous, dense, to 4 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 20—30 × 8—10 μ. Ch. alternate, antrorse, often bent, 25—32 μ long; stc. cylindric, 4—10 μ long; hc. ovate to oblong, often slightly bent, entire, 17—25 × 10—14 μ. Mh. mixed with ch., bent ampulliform, alternate or opposite, 18—23 × 9—11 μ. P. scattered, each on a radiate subiculum, slightly rough, to 350 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—48 × 16—20 μ.

On *Cryptocarya meissneri*, New South Wales, Fraser 24, type; — On *C. glaucescens*, New South Wales, Fraser 153, 200, 208, in Herb. Dept. Agric. N. S. W.

(54) *Meliola litseicola* Hansf., Sydowia **10**: 77. 1957.

Cols. epiphyllous, to 5 mm. diam. or confluent, dense. Hyphae straight or slightly undulate, branching opposite at wide angles, densely interwoven-reticulate, cells mostly 20—40×7—8 μ. Ch. alternate, straight or bent, antrorse or spreading, 26—38 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. angulose or lobate, often bent, 17—22×11—20 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—20×7—8 μ. Ms. numerous, scattered, straight, simple, acute, to 420×7—9 μ, very rarely the apex bent to sub-hamate, P. scattered, verrucose, to 140 μ diam. Sp. ellipsoid, obtuse, 3-septate, constricted, 50—55×18—20 μ.

On *Litsea* sp., Philippines, Baker, Fungi malay. 42 p. p., type; PBS 23977 p. p., Baker in PBS 83.

(55) *Meliola whetzelii* Hansf., Sydowia 10: 96. 1957.

Cols. amphigenous, to 4 mm. diam. or confluent, thin to subdense, on lower surface subvelvety. Hyphae substraight or on lower surface crooked and interwoven, branching opposite at wide angles, loosely to closely reticulate, cells mostly 20—25×5—6 μ. Ch. alternate, spreading, straight, 15—21 μ long; stc. cylindric, 2—4 μ long; hc. obtusely conoid to ovate, entire, 13—18×6—9 μ. Mh. not seen. Ms. scattered, straight, simple, obtuse, to 350×6—8 μ, gradually attenuate to about 3 μ at apex. P. scattered, verrucose, to 140 μ diam. Sp. bent ellipsoid, obtuse, 3-septate, constricted, 38—46×13—15 μ.

On *Ocotea leucoxylon*, Porto Rico, Whetzel et al. 2577, type (CUP); — On *Nectandra* sp., British Guiana, Stevens 285 p. p. (FLS), differing mainly in spores 40—46×15—17 μ.

(56) *Meliola martiniana* Gaill., Le Genre Meliola, p. 68. 1892.
= *Irenopsis martiniana* (Gaill.) Stev., Ann. Mycol. 25: 437. 1927.
= *Meliola setulifera* (Speg.) Stev., l. c. **26**: 285. 1928.
= *Meliola perseae* Stev. forma *setulifera* Speg., Bol. Acad. Nac. Cien. Cordoba **26**: 380. 1923.

Cols. amphigenous, mainly hypophyllous, thin to dense, to 8 mm. diam. Hyphae sinuous to tortuous, branching usually opposite, acute, closely reticulate, cells mostly 20—3—80×7 μ. Ch. alternate, usually bent, spreading or antrorse, 20—28 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. ovate to oblong with rounded apex, often sinuous-bent, subentire, 15—20×9—13 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 18—23×8—9 μ. Ms. mostly grouped around P., few, sometimes absent, more or less straight, simple, obtuse, to 600×9—10 μ. P. scattered or loosely aggregate in centre, to 280 μ diam., with 6—15 erect-spreading, simple, straight, obtuse, continuous

setae on upper half, up to 60—6 μ. Sp. oblong, obtuse, 4-septate, constricted, 50—68×20—27 μ.

On *Persea palustris*, Florida, Martin in Rabh. Fung. europ. 3852, type; Martin in Ellis, N. Amer. Fungi 1296 (F); — On *P. pubescens*, Florida, Nash, Plants of Florida 1800 (S, F); l. c., Tracy s. n. (F); l. c., Tracy 7280, 6600 (CUP); — On *P. domingensis*, San Domingo, Ciferri, Mycofl. Doming. exs. 258; — On *P. carolinensis*, U.S.A., Schweinitz 1028, 1189, 2069 (K); Martin s. n. (F); Ravenel, Fung. carolin. exs. 70 (K, F); Thaxter in F; — On *P. borbonia*, USA, Nash, Plants of Florida 1804 (F); — On *P. canadensis*, USA, Ravenel 114 (K); — On P. sp. indet., USA, Ravenel, Fung. amer. 82 (type of *M. perseae* f. *setulifera*; Thaxter 3799, 7351, 7371, 7537, 1538, 7539 (F).

Note. *Meliola anomala* Tracy & Earle in Bull. Torrey Bot. Club, 28: 184. 1901.

= *Leptomeliola anomala* (Tracy & Earle) Hoehnel, Sitzb. K. Akad. Wiss. Wien, Abt. I, 128: 558. 1919.

= *Meliolinopsis anomala* (Tracy & Earle) Beeli, Bull. Jard. Bot. Brux. 7: 144. 1920.

The type of this "species" is Tracy 6600 on *Persea pubescens*, Florida, represented in CUP; it consists of *Meliola martiniana*, parasitised by *Helminthosporium* sp. and by *Phaeophragmeriella meliolicola* (Syd.) Hansf.

(57) *Meliola calochaeta* Syd., Leafl. Philipp. Bot. 9: 3117. 1925.

Cols. epiphyllous or less commonly also hypophyllous, dense, to 8 mm. diam., velvety. Hyphae substraight to slightly undulate, branching opposite at wide angles, chlosely reticulate, cells mostly 15—25×5—7 μ. Ch. opposite, spreading, straight or slightly bent, 11—16 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to oblong, entire, 9—13×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19× 6—8μ. Ms. numerous, scattered and grouped around P., to 400×9 μ, 2—3-dichotomous with spreading, recurved branches to 40 μ long, these again dentate-dichotomous to 12 μ, teeth acute. P. in loose central group, verrucose, to 230 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—48×20—23 μ.

On *Cryptocarya foxworthyi*, Philippines, Elmer 17331, type (FLS, BO).

(58) *Meliola maculans* (Kunze) Hansf., comb. nov.

= *Bryocladium maculans* Kze., Flora, 1850, p. 270.

= *Pisomyxa maculans* (Kze.) Sacc., Syll. Fung. 9: 374. 1891.

Cols. hypophyllous, dense, subvelvety, to 3 mm. diam. Hyphae straight to undulate, branching opposite or irregular, acute, cells mostly 20—30×6—7)μ, closely interwoven-reticulate. Ch. alternate, subantrorse, straight or bent, 18—25 μ long; stc. cylindric, 3—6 μ long; hc. ovate-oblong, often bent, apex rounded or slightly attenuate,

entire, 13—17×7—9 μ. Mh. Mixed with ch., alternate or opposite, ampulliform, 18—24×6—8 μ. Ms. scattered and grouped around P., straight, to 400×8 μ, apex irregularly dentate to 10 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—48×19—21×15 μ.

On *Laurus* sp., Madeira, leg. Holl (Kunze in BRUX, type).

(59) *Meliola neolitseae* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 24. 1941.

Cols. hypophyllous, thin, subvelvety, to 15 mm. diam. Hyphae undulate to flexuous, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate or to about 5% opposite, spreading or subantrorse, straight or slightly bent, 16—23 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose, ovate or oblong, entire, 11—17×10—13 μ. Mh. mixed ch., opposite or alternate, ampulliform, 15—25×8—9 μ. Ms. scattered and grouped around P., substraight to flexuous, not uncinate, to 840×8—9 μ, obtuse to acute, or sometimes 2-dentate to 8 μ. P. in central group, verrucose, to 210 μ diam. Sp. ellipsoid, obtuse, often bent, 4-septate, constricted, 48—55×18—22×14—16 μ.

On *Cryptocarya chinensis*, Formosa, Yamamoto, type (IMI).

In the original description the setae were given as sometimes 2-furcate to 28 μ, with the branches shortly 2-dentate; none such were seen by the present author.

(60) *Meliola linderae* Yamam.. Trans. Nat. Hist. Soc. Formosa **31**: 20. 1941.

Cols. hypophyllous, thin, to 20 mm. diam. or widely confluent. Hyphae undulate to crooked, branching opposite or irregular at wide angles, loosely reticulate-interwoven, cells mostly 23—40×7—9 μ. Ch. alternate or more scattered, spreading, straight or bent, 17—27 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. globose, ovate or oblong, entire, straight or bent, 13—17×13—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—22×7—8 μ. Ms. mostly grouped around P., straight or slightly flexuous, to 420×9—10 μ, apex simple and acute, or rarely 2-3-dentate to 9 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—56×19—22×13—15 μ.

On *Lindera communis*, Formosa, *Yamamoto* (co-type in USDA); — On *Actinodaphne chinensis*, Kwantung, China (K ex Herb. Hongkong 1132), with sp. 45—52×17—19×12—14 μ.

(61) *Meliola litseae* Syd., Ann. Mycol. **15**: 187. 1917.

= *M. litseae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 366. 1918.

Cols. amphigenous, thin, velvety, 3—4 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite at wide angles, loosely reticulate, cells 20—35×8—10 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 23—40 μ long; stc. cylindric,

6—25 μ long; hc. ovate, clavate or oblong, entire, 16—21×10—14 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 20—27×7—9 μ. Ms. loosely scattered and grouped around P., straight or slightly bent, to 720×9—11 μ, simple and obtuse or usually 2-3-dentate to 10 μ. (Sydow gave setae to 1400 μ long, but such were not found by the present author). P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—49× 17—21 μ.

On *Litsea perrottetii* and *L. glutinosa*, Philippines, Baker, Fung. malay. 480 (type), 549; PBS 2931, 2869, 2551, 1546, 12500, 24000, 24677, 25845 p. p., 16767 p. p.; Stevens 511, 67, 1694, p. p., 530, 674, 504 (FLS); — On *L. cubeba*, Formosa, Yamamoto; — On *L. noronhae*, Java, BO 12578; (ms. all simple and acute); — On *L. polyantha*, Java, BO 10933; (ms. all simple and acute); — On *L. garciae*, Philippines, Stevens 1521 p. p., 1951; — On *L.* sp., Philippines, Elmer 16504.

(62) *Meliola beilschmiediae* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 52. 1941.

Cols. hypophyllous, arachnoid, 3—8 mm. diam. Hyphae straight to undulate, branching opposite, loosely reticulate, cells 16—30× 7—8 μ. Ch. alternate, 18—24 μ long; stc. 5—7 μ long; hc. ovoid, sometimes bent, entire, 13—17×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—8 μ. Ms. not numerous, mostly grouped around P., straight, to 780×9—11 μ, apex acute or 2-5-dentate-cristate to 12 μ. P. in central group, to 200 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 41—45×14—20 μ.

On *Beilschmiedia erythrophloia*, Formosa, Yamamoto.

The above description is condensed from Yamamoto, l. c., as specimens have not been available to me.

(63) *Meliola drepanochaeta* Syd., Ann. Mycol. **24**: 302. 1926.

Cols. hypophyllous, dense, 2—4 mm. diam. Hyphae undulate or torulose, very irregular and often geniculate-bent, branching opposite or irregular at wide angles, densely interwoven-reticulate, cells mostly 22—30×5—10 μ. Ch. alternate, spreading, sinuous to tortuous, 22—40 μ long; stc. cuneate to cylindric or irregular, 8—18 μ long; hc. versiform, oblong to very irregular, rounded-angulose to lobate, often bent to sinuous, 17—29×12—22 μ. Mh. mixed with ch., alternate, ampulliform, 20—25×9—11 μ. Ms. numerous, closely scattered, simple, obtuse, to 600×12—13 μ, widely arcuate to hamate in upper half. P. scattered, verrucose, to 300 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 52—65×22—26×17—19 μ.

On *Persea cordata*, Costa Rica, Sydow, Fung. costaric. 163, type (FLS).

(64) *Meliola uncitricha* Syd., Ann. Mycol. **24**: 308. 1926.

Cols. hypophyllous, dense, velvety, to 10 mm. diam. or some-

times confluent. Hyphae more or less sinuous, branching irregular, acute, closely radiating-reticulate and interwoven, cells mostly 35—50 × 7—9 μ. Ch. alternate, antrorse or spreading, 30 to over 100 μ long; stc. tortuous-cylindric, often 1-3-septate, up to over 100 μ long, sometimes torulose or geniculate; hc. subglobose to ovate, entire or rounded-angulose, 16—20 × 12—15 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 24—30 × 7—9 μ, neck elongate. Ms. numerous, closely scattered, to 500 × 10—12 μ, gradually attenuate to simple obtuse apex, uncinate to coiled in upper part. P. scattered, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 50—56 × 18—22 μ.

Om *Phoebe neurophylla*, Costa Rica, Sydow, Fung. costaric. 169-e, type (S); Petrak, Mycoth. gener. 21; Sydow, Fung. exot. exs. 388.

(65) *Meliola cumbrensis* Hansf., Sydowia 10: 69. 1957.

Cols. amphigenous, thin to subdense, subvelvety, to 4 mm. diam. or confluent. Hyphae straight to undulate or sinuous, branching irregular, rarely opposite, acute, becoming rather closely interwoven-reticulate, cells mostly 25—40 × 7—9 μ. Ch. alternate or very rarely opposite, straight or bent, spreading or antrorse, 22—30 μ long; stc. cylindric, 4—8 μ long; hc. ovate to cylindric-clavate, entire, 15—22 × 12—14 μ. Ms. biform: (a) scattered, straight, simple, obtuse, to 880 × 9—11 μ, (b) closely grouped around P., straight or flexuous, simple, obtuse, to 180 × 7—8 μ, apex straight, bent, uncinate or tortuous-coiled; the (b) setae not present around all perithecia. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 40—48 × 15—17 μ.

On *Phoebe* sp. indet., San Domingo, Ciferri, Mycofl. doming. exs. 351 (CUP).

What appears to be this same species occurs in Cuba, Wright 398 (K, F) on indet. host plant, but has the (a) setae acute when fully mature, and the (b) setae reach a length of 250 μ.

(66) *Meliola praetervisa* Gaill., Le Genre *Meliola*, p. 78. 1892.

Cols. mostly epiphyllous, dense, subvelvety, to 4 mm. diam. Hyphae straight, branching opposite, acute to wide, densely reticulate, cells mostly 15—20 × 9—7 μ. Ch. opposite, subantrorse, straight or slightly reflexed above, 18—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. obtusely conoid, entire, 12—18 × 8—10 μ. Mh. few, mixed with ch., alternate or opposite, conoid to ampulliform, 15—23 × 8—10μ. Ms. few to moderately numerous, scattered and grouped around P., straight, simple, acute, to 630 × 10—12 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 47—56 × 20—26 μ.

On *Lauraceae* indet., Java, type (P); New South Wales, Fraser s. n.; — On *Endiandra sieberi*, New South Wales, Fraser 233; — On *Cryptocarya mannii*, Haw5ii, Stevens 506 (FLS).

The two Australian collections of Fraser differ in ms. only to 450 μ long, the more widely rounded apices of the hc., and sp. 50—59× 23—28 μ, mostly ellipsoid. Stevens' Hawaiian collection also differs in somewhat smaller ch.

(67) *Meliola misantecae* Hansf., Sydowia 10: 79. 1957.

Cols. amphigenous, each on a brown leafspot surrounded by a darker brown marginal zone, about 2 mm. diam., black, dense, nearly smooth. Hyphae on upper surface substraight, undulate to sinous below, branching opposite or irregular at wide angles, becoming closely reticulate and almost solid, cells mostly 20—25×7—9 μ. Ch. alternate or about 3% opposite, spreading or antrorse, straight or bent, 20—32 μ long; stc. cylindric, 4—11 μ long; hc. cylindric to clavate, entire, straight or bent, 15—21×11—13 μ. Mh. very few, mixed with ch., mostly alternate, ampulliform, 20—27×7—8 μ. Ms. thinly scattered, straight, simple, acute, to 300×9—11 μ. P. in central group, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 52—58×20—21 μ.

On *Misanteca triandra*, San Domingo, Ciferri, Mycofl. doming. exs. 368 (CUP).

The specimen Ekman 3307, on same host in San Domingo, reported by Ciferri (1954) is probably the same species, though recorded as *M. acutiseta* Syd.

(68) *Meliola dactylipoda* Syd. var. *brevipoda* Hansf., Proc. Linn. Soc. New South Wales, 78: 61. 1953.

Cols amphigenous, thin, to 5 mm. diam. or effuse and confluent. Hyphae substraight to slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate or about 2% opposite, subantrorse, straight or slightly bent, 16—27 μ long; stc. cylindric, 3—9 μ long; hc. mostly ovate with slightly pointed apex, some bent cylindric and rounded at apex, all entire, 13—20× 7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—23×6—8 μ. Ms. thinly scattered, with shorter ones grouped around P., straight, simple, acute, to 900×8—9 μ. P. loosely scattered, rough, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—46×15—20 μ.

On *Cryptocarya patentinervis*, New South Wales, Fraser s. n., type, in Herb. Dept. Agric. N.S.W.

(69) *Meliola acutiseta* Syd., Leafl. Philipp. Bot. 6: 1921. 1913.

Cols. hyphphyllous, thin, subvelvety, to 10 mm. diam. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×5—7 μ. Ch. opposite or alternate, straight or variously bent, 13—35 μ long; stc. cylindric, 3—18 μ long; hc.

cylindric with rounded apex, straight or bent, entire, 9—18×5—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 12—18× 6—7 μ. Ms. closely scattered, straight, simple, acute, to 350×7—9 μ. P. loosely scattered, to 180 μ diam., surface cells rounded to conoid. Sp. oblong to subfusoid, ends attenuate-rounded, 4-septate, slightly constricted, 38—44×11—13 μ.

On *Persea piriformis*, Philippines, PBS 13312, type (S).

(70) *Meliola beilschmiediae* Yamam. var. *cinnamomi* Hansf., Reinwardtia **3**: 88. 1954.

Cols. hypophyllous, thin, to 5 mm. diam., thinly velvety. Hyphae undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 30—40×8—10 μ. Ch. alternate or more scattered, spreading, often bent, 20—35 μ long; stc. cylindric, 4—12 μ long; hc. ovate to piriform, entire, 15—24×25—18 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—30×9—12 μ. Ms. mostly grouped around P., straight, simple, acute, to 1100×10—12 μ. P. scattered, verrucose, to 230 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted. 53—61×22—24 μ, central cell usually the largest.

On *Cinnamomum iners*, Java, Bogor 4675, type.

(71) *Meliola magna* Stev., Ann. Mycol. **26**: 252. 1928.

Cols. amphigenous, thin, to 20 mm. diam. Hyphae substraight, branching opposite, acute, loosely interwoven-reticulate, cells mostly 30—60×7—8 μ. Ch. alternate, antrorse or spreading, more or less bent, 30—55 μ long; stc. cuneate to cylindric, 9—23 μ long; hc. ovate to clavate, entire, often slightly bent, 21—32×16—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 25—40×7—9 μ, neck elongate. Ms. scattered, straight or slightly bent, simple, obtuse, to 1400×10—12 μ, gradually attenuate to 3—4 μ at apex. P. scattered, slightly verrucose, to 260 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 57—64×21—27 μ.

On *Nectandra* sp., Costa Rica, Stevens 373, type (F, FLS).

(72) *Meliola machili* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 23. 1941.

Cols. amphigenous, mostly hypophyllous, to 11 mm. diam., subvelvety. Hyphae irregularly undulate, crooked or even geniculate, branching opposite or irregular at wide angles, loosely to rather closely interwoven-reticulate, cells 18—30×8—10 μ. Ch. alternate, antrorse or spreading, straight or bent, 18—26 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. subglobose to oblong, entire, 16—21× 13—16 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 16—30×9—12 μ. Ms. fairly numerous, scattered, straight or slightly bent, simple, acute, to 920×11—14 μ. P. in central group, verrucose, to 225 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 57—67 ×21—28 μ.

On *Machilus kusanoi*, Formosa, Yamamoto, type; — On *M. rimosa*, Java, BO 12769. — On *M. pseudolongifolia*, Formosa, Yamamoto, co-type (USDA).

(73) *Meliola actinodaphnes* Hansf., Farlowia **3**: 274. 1948.

Cols. amphigenous, dense, to 4 mm. diam. Hyphae on upper surface straight, on lower surface very crooked, cells 15—25×8—11 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or bent, subantrorse or spreading, 20—38 μ long; stc. cylindric, 3—14 μ long; hc. cylindric to clavate or irregular, rounded or truncate at apex, straight or variously bent, 11—25×11—19 μ. Mh. mixed with ch., alternate or opposite, 14—22×8—11 μ, ampulliform. Ms. scattered and grouped around P., straight, simple, acute, to 800×10—11 μ. P. scattered, verrucose, to 240 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 52—65×23—28 μ.

On *Actinodaphne* sp., China, Cheo 1608, type (F).

(74) *Meliola cryptocaryae* Doidge, Trans. Roy. Soc. South Africa, **8**: 112. 1920.

= *Meliola celtidicola* Van der Bijl, South African Journ. Sci., **23**: 293. 1926.

Cols. hypophyllous, thin, to 10 mm. diam. or widely confluent. Hyphae undulate to tortuous, branching opposite or irregular, loosely reticulate, cells 20—50×6—10 μ. Ch. alternate, antrorse or spreading, straight or bent, 25—35 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. irregularly curved to uncinate, rounded angulose to sublobate, 23—29×13—20 μ. Mh. usually separate, opposite, ampulliform. Ms. scattered, straight or somewhat flexuous, simple, acute, to 800×7—10 μ. P. scattered or in small groups, verrucose, to 320 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted slightly, 50—60×18—22 μ.

On *Cryptocarya latifolia*, South Africa, PRET 11016, 11352; — On *C. transvaalensis*, South Africa, PRET 17775; — On *C. woodii*, South Africa, PRET 9025, 11603, 12410, 12442, 14949; — On *C.* sp., South Africa, Van der Bijl 910.

(75) *Meliola sempeiensis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 56. 1941.

Cols. hypophyllous, thin, to 6 mm. diam., slightly velvety. Hyphae undulate to crooked, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 23—40×7—8 μ. Ch. alternate or more scattered, antrorse or spreading, straight or bent, 19—25 μ long; stc. cylindric, 5—8 μ long; hc. subglobose to oblong, entire, 13—18×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—30×8—10 μ. Ms. mostly grouped around P., simple, more or less bent, acute, to 900×11—14 μ. P. in close central group, verrucose, to 225 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, slightly constricted, 51—60×14—25 μ, the central cell usually slightly the largest.

On *Nothaphoebe konishii*, Formosa, Yamamoto, type (IMI).

(76) *Meliola saccardoi* Syd., Ann. Mycol. **20**: 68. 1922.

= *Meliola cookeana* Speg. var. *saccardoi* Syd., 1 c., 2: 170. 1904.

Cols. amphigenous, dense, to 3 mm. diam. or confluent, velvety. Hyphae undulate to crooked, branching alternate or unilateral, acute, closely reticulate, cells mostly 15—30×7—9 μ. Ch. alternate, subantrorse, straight or bent, 24—33 μ long; stc. cuneate to cylindric, 3—12 μ long; hc. ovate, piriform or cylindric with rounded apex, sometimes angulose or shallowly lobate, 13—22×10—17 μ. Mh. separate, opposite or alternate, ampulliform, 20—30×6—9 μ. Ms. numerous, scattered, substraight, simple, acute, to 350×8—10 μ. P. in central group, verrucose, to 300 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 47—55×17—21 μ.

On *Litsea mollis*, Chile, Neger s. n., 1897, type (S).

(77) *Meliola floridensis* Hansf., Sydowia **10**: 72. 1957.

Cols. amphigenous, dense, to 8 mm. diam. or confluent, slightly velvety. Hyphae substraight on upper surface, undulate to sinuous below, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—8 μ. Ch. alternate, subantrorse, straight or slightly bent, 19—25 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to cylindric, entire, 12—18×8—11 μ. Mh. separate, opposite or alternate, ampulliform, 17—21×8—9 μ. Ms. scattered and grouped around P., straight, simple, obtuse to subacute, to 480×8—9 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—52×20—23 μ.

On *Persea palustris*, Florida, Tracy 6560, type (CUP).

(78) *Meliola tetradeniae* (Berk.) Theiss. & Syd., Ann. Mycol. **12**: 177. 1914.

= *Dothidea tetradeniae* Berk., Journ. Linn. Soc. London **14**: 136. 1875.

= *Homostegia tetradeniae* (Berk.) Sacc., Syll. Fung. **2**: 650. 1883.

= *Meliolinopsis tetradeniae* (Berk.) Beeli, Bull. Jard. Bot. Bruxelles **7**: 119. 1920.

Cols. hypophyllous, subdense, immature. Hyphae undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate, spreading, straight or bent, 19—25 μ long; stc. cylindric, 4—8 μ long; hc. piriform to oblong, entire, 15—18×10—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—25×9—10 μ. Ms. few, grouped around P., straight, immature. P. scattered, verrucose, immature. Sp. oblong to subellipsoid, obtuse, 4-esptate, constricted, 40—46×18—22 μ.

On *Tetradenia* sp., Ceylon, type in K, mixed with *Armatella tetradeniae* Hansf.

Theissen and Sydow gave the perithecia as up to 400 μ diam., but these problably belonged to the *Armatella*; they also gave the

spores as 48—54×20—23 μ, but none approaching this size were found in the present author's preparations, in which many spores were germinating.

(79) *Meliola litseae* Syd. var. *rotundipoda* Hansf., Reinwardtia **3**: 88. 1954.

= *Meliola litseae* Graff, Mem. Torr. Bot. Club **17**: 61, 1918, non Sydow, 1917.

Cols. epiphyllous, rarely also hypophyllous, to 3 mm. diam., dense, velvety. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate, subantrorse, straight, 17—20 μ long; stc. cylindric to cuneate, 7—4 μ long; hc. ovate to piriform, netire, 11—13×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 22—30×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 650×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×16—18 μ.

On *Litsea glutinosa*, Philippines, Baker, Fung. malay. 362, type (S, BO, FLS); Baker 42; PBS 3001, 20994, 25845 p. p., 1600 p. p., 1504, 23977, 32161, Stevens 504 (FLS); — On *L. cubeba* (*L. citrata*), Java, BO 12399; — On *L. garciae*, Philippines, Stevens 1521 p. p. (FLS); — On *L. noronhae*, Java, Boedijn 1298 (BO); — On *L. perrottetii*, Philippines, PBS 2869 p. p. (F); — On *L.* sp., Java?, BO 16056; Philippines, PBS 23783.

This often occurs mixed with the species type, from which it is easily distinguished by the denser colonies and shorter hyphopodia.

(80) *Meliola ocoteicola* Stev., Illinois Biol. Monogr. 2: 45. 1916.

Cols. amphigenous, 3—10 mm. diam. or confluent, thin. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 25—40×6—7 μ. Ch. alternate, spreading or antrorse, straight or bent, 20—25 μ long; stc. cylindric, 2—5 μ long; hc. cylindric with rounded apex, entire, 14—17×7—9 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 15—22×6—8 μ. Ms. few, scattered, straight or slightly bent, simple, acute, to 350×8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—41×15—17 μ.

On *Ocotea leucoxylon*, Porto Rico, Stevens 7560 (type), 4762 (FLS); Whetzel 2577 p. p. (CUP).

(81) *Meliola dactylipoda* Syd., Bothalia 2: 460. 1928.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae straight or undulate, branching opposite at varying angles. loosely reticulate, cells mostly 25—30×7—10 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 25—39 μ long; stc. cylindric, 5—10 μ long; hc. cylindric or long ovate, straight or slightly undulate, entire, rounded at apex, 20—32×8—10 μ. Mh. numerous, mixed with ch., opposite, ampuliform, 13—20×6—8 μ. Ms. thinly scattered, mostly

grouped around P., simple, straight, to 500×7—10 μ, apex acute or subacute. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—47×16—18 μ, the central cell sometimes slightly the largest.

On *Cryptocarya woodii*, South Africa, PRET 14953, type; — On *C. liebertiana*, South Africa, PRET 15518; — On *C. hirsuta*, Brazil, Theissen, Decad. fung. brasil. 92 (S); — On *C. meissneri*, New South Wales, Fraser 83; — On *C.* sp., New Guinea, Womersley in WARI 5413.

(82) *Meliola dactylipoda* Syd. var. *jamaicensis* Hansf., Sydowia **10**: 68. 1957.

Cols. amphigenous, rather thin, to 5 mm. diam. Hyphae straight, branching opposite, acute, loosely reticulate, cells mostly 25—50×7—8 μ. Ch. alternate, subantrorse, straight, 24—31 μ long; stc. cylindric, 5—10 μ long; hc. cylindric with rounded apex, entire, straight, 17—24×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—27×8—10 μ. Ms. grouped around P., straight, simple, obtuse, to 450×8—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—49×18 μ.

On *Nectandra coriacea*, Jamaica, Martyn in IMI 34793, type.

(83) *Meliola phoebes* Hansf., Proc. Linn. Soc. London **160**: 136. 1948.

Cols. epiphyllous, thin, to 10 mm. diam. Hyphae substraight to crooked and irregular, branching opposite at wide angles, loosely reticulate, cells mostly 25—30×6—8 μ. Ch. alternate, spreading, straight or somewhat bent, 17—30 μ long; stc. cylindric, 4—8 μ long; hc. cylindric to ovate, straight or bent, 13—25×7—10 μ, entire. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 15—22×7—10 μ. Ms. mostly in small groups around P., straight or slightly flexuous, simple, obtuse, to 450×7—9 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45×15—17 μ.

Some mycelial hyphae are tortuous, to 10 μ thick, with shorter and wider hyphopodia, more bent than on the straighter hyphae; these can be traced back to junctions with the straight hyphae.

On *Phoebe costaricensis*, Costa Rica, Sydow, Fung. costaric. 167-a p. p., (type in PRET); — On *P. montana*, San Domingo, Ciferri, Mycofl. doming. exs. 256.

(84) *Meliola antioquensis* Orejuela, Mycologia **36**: 435. 1944.

Cols. epiphyllous, large and irregular, spreading over leaf, thin. Hyphae straight, branching opposite, acute, loosely reticulate, cells mostly 20—40×7—8 μ. Ch. alternate, subantrorse, straight or slightly bent, 16—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to piriform, entire, straight or slightly bent, 12—7 μ long; hc. ovate to piriform, entire, straight or slightly bent, 3—17×9—11 μ. Mh.

mixed with ch., opposite or alternate, ampulliform, 14—19×7—9 μ. Ms. scattered and grouped around P., erect, straight or slightly flexuous, simple, acute or subacute, to 360×7—8 μ P. scattered, slightly verrucose, to 220 μ diam. Sp. oblong to subellipsoid, 4-septate, constricted, 40—48×17—19×14—15 μ.

On *Persea petiolaris*, Colombia, Orejuela 1828 (type in CUP).

The original description gave the setae as perithecial; all arise from the mycelium, though often close to the base of the perithecium.

(85) **Meliola philippinensis** (Stev.) Hansf., comb. n.

= *Meliolina philippinensis* Stev., Ann. Mycol. **25**: 417. 1927.

Cols. hypophyllous, thin, to 30 mm. diam. or widely confluent. Hyphae substraight to crooked, branching opposite or irregular ar wide angles, loosely to rather closely interwoven-reticulate, cells mostly 30—40×5—6 μ. Ch. alternate or loosely scattered along the hyphae, spreading or subantrorse, straight or bent, 18—37 μ long; stc. cylindric, 5—20 μ long; hc. ovate, entire, straight or bent, 13—23×9—14 μ. Mh. mixed with ch., numerous, opposite or alternate, ampulliform, 18—30×7—9 μ, neck elongate. Ms. thinly scattered, straight, simple, acute, to 270×7 μ. P. scattered, verrucose, to 130 μ diam. (immature). Sp. oblong, obtuse, 4-septate, slightly constricted, 42—47×11—13 μ, often slightly bent.

On *Cryptocarya* sp., Philippines, Ramos in PBS 24720, type (FLS).

(86) *Meliola litseae-citratae* Hansf., Reinwardtia **3**: 89. 1954.

Cols. epiphyllous, dense, to 1 mm. diam. Hyphae substraight to undulate, branching alternate or irregular, acute, densely radiating-reticulate and almost solid, cells mostly 12—20×6—7 μ. Ch. alternate, antrorse, straight or bent, 14—20 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. globose to piriforme, straight or bent, rarely rounded-angulose, 10—15×9—13 μ. Mh. few, mixed with ch., alternate, ampulliform, 14—19×6—8 μ. Ms. rare, often absent, grouped around P., straight, simple, obtuse, to 180×7—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41×14—16 μ.

On *Litsea cubeba* (*L. citrata*), Java, Boedijn in BO 10924, type.

Host Family 13. Hernandiaceae.

(87) **Asteridiella hernandiacearum** (Cif.) Hansf., comb. n.

= *Meliola hernandiacearum* Cif., Mycopathologia **7**: 134. 1954.

Cols. small, epiphyllous, to 2.5 mm. diam., rarely subconfluent. Hyphae dark brown, septate, branching opposite at wide angles, straight or slightly sinuous, 7—10 μ thick, "with prickles 2—4 μ long, conic and acuminate, scattered and not frequent, as a rule single, irregularly distributed". Ch. 16—19 μ long, opposite or rarely alternate,

18—20 μ apart; stc. 4—6 μ long; hc. ovate, oblong or slightly irregular, entire, straight or slightly bent, 9—13×8—10 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 14—18×8—10 μ. Setae none. P. scattered, rough to almost smooth, 72—100 μ diam. Sp. ellipsoid to ovoid, ends rounded to subacute, 4-septate, slightly constricted, 43—47×18—22 μ.

On *Hernandia* sonorae San Domingo, Ekman 4476, type;

Specimens have not been available to the present writer, but the description of the spiculate hyphae indicates something unique amongst the *Meliolineae*.

(88) *Meliola illigerae* Stev. & Rold., Philipp. Journ. Sci. **56**: 66. 1935.

Cols. epiphyllous, dense, to 3 mm. diam., velvety. Hyphae substraight to undulate, branching opposite or irregular, acute, closely reticulate, cells mostly 20—30×7—9 μ. Ch. alternate, subantrorse, straight or bent, 30—39 μ long; stc. cylindric to cuneate, 8—15 μ long; hc. oblong to clavate, more or less rounded-angulose, 21—30×14—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—20×7—9 μ. Ms. scattered, straight or slightly bent, simple, obtuse, to 750×10—12 μ. P. scattered, slightly verrucose, to 180 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 40—46×17—18×13—14 μ.

On *Illigera luzonensis*, Philippines, Stevens 1524, type (CUP, FLS).

(89) *Meliola consocia* Cif., Mycopathologia **7**: 116. 1954.

Cols. epiphyllous, thin, crustaceous, firmly adherent, to 2.5 mm. diam. Hyphae straight or undulate, branching opposite, acute, loosely reticulate, 8—11 μ wide. Ch. alternate or more rarely opposite, 25—43 μ apart, 18—22 μ long; stc. 3—7 μ long; hc. ovoid, ellipsoid or cylindric, 12—17×10—15 μ, entire. Mh. few, mixed with ch., subconoid, opposite or alternate, 18—23×9—11 μ. Ms. not numerous, straight or curved, acute or subacute, to 225×10—13 μ, 4—5 μ wide at the tip. Sp. elliptic to cylindric, ends obtuse to subacute, 4-septate, slightly constricted, 26—32×11—17 μ.

On *Hernandia sonorae*, San Domingo, Ekman 15378, type.

Specimens of this species have not been available to the present writer, and the above description is condensed from the original.

Host Family 14. Myristicaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4220 Cols. thin; hyphae tortuous; hc. globose to lobate; P-cells conoid-mammillate ..... *knemae* (90)

Meliola

31⅓1.5333 Cols. subdense, subvelvety; hc. large, subglobose to ellipsoid ..... *knemicola* (91)

3123.4221	Cols. dense, velvety; hc. small, ovate to piriform; ms. obtuse ..... *uncinata*	(92)
3121.4221	Cols. thin, subvelvety; hc. larger, ovate; ms. subuncinate, acute or abtuse ..... *pycnanthi*	(93)

(90) *Asteridiella knemae* Hansf., Sydowia **10**: 48. 1957.
= *Irenina* knemae Hansf., Reinwardtia **3**: 96. 1954.

Cols. hypophyllous, effuse and widely confluent, thin. Hyphae crooked, branching opposite or irregular, at wide angles, loosely reticulate, or the hyphae in strands and forming close knots in places, cells 20—30×6—8 μ. Ch. alternate or more distant, spreading, straight or bent, 19—29 μ long; stc. cylindric, 5—12 μ long; hc. globose, ovate or irregularly and shallowly angulose to lobate, 14—20×13—18 μ. Mh. few, mixed with ch., alternate or opposite, 13—19×6—9 μ. P. loosely scattered, verrucose, to 190 μ diam., surface cells conoid to mammillate, to 25 μ high. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 40—47×18—19×12—14 μ.

On *Knema glauca*, Java, Boedijn 1219 (BO 12404, type); BO 10992; — On *K. laurina*, Java, van Overeem 6, 32 (BO 799, 797).

(91) *Meliola knemicola* Hansf., Reinwardtia **3**: 97. 1954.

Cols. amphigenous, subdense, thinly velvety. Hyphae substraight to flexuous, branching opposite or irregular at wide angles, loosely to rather closely reticulate, cells 25—40×8—10 μ. Ch. alternate, straight or bent, 28—45 μ long; hc. on upper surface subglobose to ellipsoid and entire, on lower surface more angulose and bent, 17—30×11—18 μ. Mh. numerous, mixed with ch., opposite or alternate, 19—32×8—10 μ. Ms. mostly around P., straight, simple, obtuse, acute or 2-3-dentate to 10 μ, up to 850×11—13 μ. P. loosely scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 51—59×25—29×19—23 μ.

On *Knema glauca*, Java, Boedijn in BO 10958, type, BO 10992, p. p.

(92) *Meliola uncinata* Syd., Leafl. Philipp. Bot. **9**: 3120. 1925.

Cols. hypophyllous, velvety, dense, to 10 mm. diam. Hyphae substraight, branching opposite, acute, closely reticulate-interwoven, cells mostly 20—25×6—7 μ. Ch. alternate or to 20% opposite, subantrorse, 14—20 μ long, straight or rlightly bent; stc. cylindric to cuneate, 3—8 μ long; hc. globose, ovate or oblong, entire, 9—14×7—11 μ. Mh. mixed with ch., few, alternate or rarely opposite, 15—25 μ long. Ms. numerous, scattered, simple, obtuse to subacute, the upper half flexuous to uncinate, to 280×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×13—15 μ.

On *Horsfieldia gigantifolia*, Philippines, Elmer 17222, type (S).

(93) *Meliola pycnanthi* Hansf., Sydowia **10**: 86. 1957.

Cols epiphyllous, thin, to 3 mm. diam. Hyphae slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 20—35× 7—8 μ. Ch. alternate, antrorse, 24—31 μ long; stc. cylindric to cuneate, 8—14 μ long; hc. ovate to clavate, rounded or somewhat pointed at apex, entire, 15—20×10—13 μ. Mh. separate, opposite, ampulliform. Ms. numerous, scattered, simple, slightly bent to somewhat uncinate, obtuse to acute, to 250×7—8 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—45×17—20 μ.

On *Pycnanthus kombo*, Uganda, Hansford 2281, type.

Host Family 15. Ranunculaceae.

(94) *Meliola knowltoniae* Doidge, Bothalia **1**: 308. 1924.

Cols. epiphyllous, rather thin, to 5 mm. diam. Hyphae straight or slightly sinuous, branching opposite at wide angles, loosely reticulate, cells mostly 35—40×9—11 μ. Ch. alternate or very rarely opposite, straight or usually bent, subantrorse, 22—37 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. piriform and entire, or more often sinuous to sublobate, bent to uncinate, 15—23×13—18 μ. Mh. mixed with ch., opposite, ampulliform, 16—18×8—10 μ. Ms. mostly grouped around P., straight or slightly bent, to 500×8—10 μ, simple, acute to obtuse. P. in central group, verrucose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—47×16—20μ

On *Knowltonia vesicatoria*, South Africa, PRET 17177, type- -- On *Clematis gouriana* and *C. floribunda*, Formosa, Yamamoto (USDA); — On *C. glycinoides*, New South Wales, Fraser 27, 176.

Host Family 23. Menispermaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola			
3133.4222	Cols. thin, subvelvety; hyphae substraight; hc. small, subglobose; ms. acute or dentate ...	*cissampeli*	(95)
31⅓3.3223	Cols. thin, subvelvety; hc. larger, subglobose; ms. acute or dentate	*cissampeli* var. *tiliacorae*	(96)
3113.4223	Cols. dense, velvety; hyphae undulate; hc. oblong, entire; ms. obtuse	*pericampyli*	(97)
3113.4223	Cols. dense, velvety; hyphae substraight; hc. oblong, entire; ms. acute	*pericampyli* var. *triclisiae*	(98)
3111.3223	Cols. thin; hyphae substraight; hc. ovate to subglobose; ms. acute	*banguiensis*	(99)
3111.3222	Cols. thin; hyphae undulate; hc. ovate to clavate, entire; ms. obtuse	*cissampelicola*	(100)
3111.3221	Cols. dense, velvety; hyphae crooked; hc. ovate to subglobose; ms. obtuse.....	*stephaniae*	(101)

(95) *Meliola cissampeli* Hansf. & Stev., Journ. Linn. Soc. London **51**: 272. 1937.

Cols. epiphyllous, rather thin, to 5 mm. diam., slightly velvety. Hyphae straight to slightly undulate, branching opposite at wide angles, becoming closely reticulate, cells mostly 20—30×5—7 μ. Ch. alternate or about 2% opposite, antrorse or spreading, usually straight, 13—17 μ long; stc. cylindric, 3—6 μ long; hc. subglobose, entire, 9—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. thinly scattered, straight, to 360×7—9 μ, apex often slightly sinuous-torulose, rarely simple and acute, usually 2—3-dentate to 30 μ, with the longer teeth sometimes denticulate. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—40×12—15 μ.

On *Cissampelos mucronata*, Uganda, Hansford 1521, type; 2847, 3276; — On *Rhigiocarya racemifera*, Sierra Leone, Deighton 1998; Gold Coast, Hughes in IMI 44259.

(96) *Meliola cissampeli* Hansf. & Stev. var. *tiliacorae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 3. 1948.

Cols. epiphyllous, rather thin, to 5 mm. diam., thinly velvety. Hyphae substraight, branching opposite, acute, becoming closely reticulate, cells mostly 25—30×7—9 μ. Ch. alternate or about 2% opposite, spreading, usually straight, 15—21 μ long; stc. cylindric, 3—7 μ long; hc. clavate to subglobose, entire, 11—16×10—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—19×8—9 μ. Ms. scattered, simple, straight, acute, or rarely 2-dentate to 5 μ, up to 720×8—9 μ. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×13—15 μ.

On *Tiliacora* sp., Sierra Leone, Deighton 1388 (type), 1801, 1884; — On *T. warneckei*, Gold Coast, Hughes in IMI 39606, 39605, 39604.

(97) *Meliola pericampyli* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 55. 1941.

Cols. amphigenous, mostly epiphyllous, more or less velvety, to 4 mm. diam. or confluent. Hyphae straight to undulate, branching opposite or alternate, acute, densely reticulate, cells mostly 20—35×6—7 μ. Ch. alternate or about 2% opposite, spreading or subantrorse, straight or bent, 15—25 μ long; stc. cylindric, 4—8 μ long; hc. subblobose to oblong, entire, 11—16×9—13 μ. Mh. not numerous, mixed with ch., alternate or opposite, ampulliform, 16—28×7 9 μ. Ms. fairly numerous, scatterd, simple, straight, acute, to 800×9—12 μ. P. in close central group, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—46×13—16 μ.

On *Pericampylus formosanus*, Formosa, Yamamoto, type (IMI).

(98) *Meliola pericampyli* Yamam. var. *triclisiae* Hughes, Mycol. Paper, IMI, **48**: 55. 1952.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., dense. Hyphae substraight, braching opposite at wide angles, densely reticulate, cells mostly 18—22×7—9 μ. Ch. alternate or to 20% opposite, straight, subantrorse, 14—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. oblong, entire, straight, 11—17×8—10 μ. Mh. mixed with ch., opposite or unilateral, ampulliform, 18—24×6—8 μ. Ms. scattered, simple, straight, acute, to 650×9—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—44×14—14 μ.

On *Triclisia subcordata*, Gold Coast, Hughes in IMI 44162-a (type), 44163; — On *Epinetrum undulatum*, Uganda, Hansford 3710, with setae to 800 μ, scattered, and shorter ones (—300 μ) around P.

(99) *Meliola banguiensis* Yates, Philipp. Journ. Sci., C, Botany, **13**: 365. 1918.

Cols. amphigenous, mostly epiphyllous, thin, to 20 mm. diam. or confluent. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—40×6—8 μ. Ch. alternate, straight, antrorse or spreading, 15—22 μ long; stc. cylindric or cuneate, 4—7 μ long; hc. subglobose to ovate, entire, 10—17×10—12 μ. Mh. mixed with ch., opposite or unilateral, ampulliform, 16—20×7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 650×10—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×13—14×11—12 μ.

On *Menispermaceae* indet., Philippines, PBS 27697, type (F); — On *Tinomiscium phytocrenoides*, Java, Boedijn 2061 (BO 13597), with setae only 8—10 μ thick, sp. 33—38×13—16×11—13 μ.

(100) *Meliola cissampelicola* Hansf., & Thirum., Farlowia **3**: 291. 1948.

Cols. amphigenous, mostly epiphyllous, to 1 mm. diam. or numerous and widely confluent, thin. Hyphae slightly undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—35×6—8 μ. Ch. alternate, subantrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 4—11 μ long; hc. ovate to clavate, entire, 13—20×9—13 μ. Mh. separate, opposite or mostly alternate or unilateral, ampulliform, 14—23×6—8 μ. Ms. thinly scattered, somewhat bent, not uncinate, simple, obtuse, to 340× 8—9 μ. P. in loose central group, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39 ×13—16 μ.

On *Cissampelos convolvulacea*, South India, Thirumalachar 865, type.

(101) *Meliola stephaniae* Hansf., Reinwardtia **3**: 93. 1954.

Cols. epiphyllous, to 3 mm. diam. or confluent, subdense, velvety. Hyphae undulate to flexuous, branching opposite, acute, closely

radiating-reticulate, cells mostly 25—35×6—7 μ. Ch. alternate, antrorse, straight, 18—23 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. subglobose to subclavate, entire, 12—16×10—13 μ. Mh. separate, opposite or alternate, conoid to ampulliform, 20—25×7—9 μ. Ms. numerous, scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 240×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×14—16×12—13 μ.

On *Stephania hernandifolia*, Java. Boedijn 2650, type (BO 14448); — On *S. capitata*, Java, Boedijn 1660 (BO 13369) with setae obtuse to subacute, to 500 μ long; — On *Cyclea barbata*, Java, Foreman s. n. (K).

Host Family 24. Aristolochiaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3301.4220	Cols. thin to subdense; hc. subglobose; ps. obtuse, bent to coiled at apex	*aristolochiella*	(102)

Meliola

3121.5332	Cols. dense, velvety; hc. lobate; ms. arcuate to uncinate, obtuse	*entebbeensis*	(103)
3113.3221	Cols. thin; hc. globose, entire; ms. simple, acute	*catharinensis*	(104)
3111.5332	Cols. dense, velvety; hc. subglobose to ovate or angulose; ms. acute	*atricapilla*	(105)
3111.4223	Cols. thin; hc. subglobose, entire; ms. acute...	*aristolochiae*	(106)
3111.4231	Cols. dense, velvety, subcrustose; hc. large, subglobose to angulose; ms. acute	*aristolochiicola*	(107)

(102) *Irenopsis aristolochiella* Hansf., Sydowia **11**: 46. 1958.

Cols. amphigenous, thin to subdense, to 3 mm. diam., smooth. Hyphae undulate, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, antrorse or spreading, often bent, 18—25 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose, entire, 12—18×11—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—20×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam.; ps. 4—10, straight or slightly flexuous below, obtuse and bent to coiled at apex, dark brown, thick-walled, smooth, 1—2-septate, to 130×7.5 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×13—15×11 μ.

On *Aristolochia* sp., British Guiana, Stevens 107, type (FLS).

(103) *Meliola entebbeensis* Hansf., Proc. Linn. Soc. London, **156**: 106. 1944.

Cols. amphigenous, dense, velvety, to 12 mm. diam. or confluent. Hyphae substraight, branching opposite or irregular, acute, densely

radiating-reticulate, cells mostly 25—40×8—9 μ. Ch. alternate or more scattered, antrorse, straight or slightly bent, 30—40 μ long; stc. cylindric to cuneate, straight or bent, 12—21 μ long; hc. irregularly rounded-angulose to lobate, versiform, 18—25×17—20 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 22—26×8—10 μ. Ms. numerous, scattered, simple, obtuse, the upper half arcuate to widely hamate-uncinate, to 360×8—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate constricted, 48—56×18—21 μ, rarely narrowly ellipsoid.

On *Aristolochia densivenia*, Uganda, Hansford 3178 (type), 3439, 3380, 3364, 3944.

(104) *Meliola catharinensis* Hansf., Sydowia 9: 12. 1955.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae sinuous to crooked, branching opposite or irregular, at wide angles, cells mostly 15—20×6—7 μ. Ch. alternate or opposite, spreading, straight or bent, 11—15 μ long; stc. cylindric, 3—4 μ long; hc. globose, 8—11 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 230×8—9 μ. P. in central group, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—38×13—14 μ.

On *Aristolochia triangularis*, Brazil, Ule, Herb. brasil. 971 p. p., mixed with *M. aristolochiicola*. (S).

This specimen was originally reported by Rehm as *M. ludibunda*.

(105) *Meliola atricapilla* Starb., Arkiv. f. Bot., 2: 9. 1904.

Cols. epiphyllous, dense, velvety, to 2 mm. diam., rarely confluent. Hyphae substraight to slightly sinuous, branching opposite, acute, densely radiating-reticulate, cells mostly 15—25×7—10 μ. Ch. alternate, antrorse, straight or bent, 20—30 μ long; stc. cylindric or cuneate, 5—12 μ long; hc. subglobose, ovate or irregularly rounded-angulose, versiform, 14—21×10—18 μ. Mh. usually separate, mostly opposite, ampulliform, 15—20×8—10 μ. Ms. numerous, straight or slightly bent, simple, acute or obtuse, to 310×8—11 μ. P. scattered, verrucose, to 220 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate constricted, 48—53×18—21 μ.

On *Aristolochia* sp., Paraguay, Lindman B-313, type (S); Brazil, Rick, Fungi austro-amer. 324; Rehm, Ascomyc. 1923. (S).

Both the Brazilian collections were made by Theissen, and were reported by Rehm as *M. ambigua*.

(106) *Meliola aristolochiae* Stev. & Tehon, Mycologia 18: 4. 1926.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., thin. Hyphae substraight or slightly undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse or spreading, straight or somewhat reflexed, 13—17 μ long; stc. cylindric to cuneate, 3—6 μ long ; hc. subglobose to ovate, straight or recurved, entire, 9—13×8—12 μ. Mh. mixed

with ch., mostly alternate, ampulliform, 17—22×7—9 μ. Ms. scattered, straight, simple, acute, to 660×8—9 μ. P. scattered, verrucose, to 40 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 32—42× 13—15 μ.

On *Aristolochia* sp., British Guiana, Stevens 459 (type), 165, 543, 673 (F, FLS); Costa Rica, Stevens 691, 890 (FLS).

Stevens gave the ms. as acute or obtuse, but the latter are merely immature.

(107) *Meliola aristolochiicola* Stev., Ann. Mycol. Berlin **26**: 278. 1928.

Cols. amphigenous, mostly epiphyllous, dense, velvety, subcrustose, to 3 mm. diam. or confluent. Hyphae substraight to sinuous, branching opposite, acute, closely interwoven-reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, more less antrorse, often bent, 18—27 μ long; stc. cuneate or cylindric. 5—10 μ long; hc. ovate, subglobose or rounded-angulose, 13—20×12—16 μ. Mh. separate, opposite, ampulliform, 13—20×7—9 μ. Ms. scattered, numerous, simple, straight, acute, to 280×8—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×16—18×13—15 μ.

On *Aristolochia maxima*, Panama, Stevens 1005, type (F, FLS); — On *A. brachura*, San Domingo, Ciferri 2800 (S); — On *A.* sp., San Domingo, 73 (? leg. Sallé) in Herb. Kew, has longer setae to 450×10—11 μ; On *A. triangularis*, Brazil, Ule 971 p. p. (S); — On *A.* sp., Trinidad, Baker & Dale in ICTA 1812.

Host Family 28. Piperaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.5240	Cols. dense, strongly parasitic; hc. ovate, entire	*ugandensis*	(108)
3101.4240	Cols. thin; hc. rounded-angulose	*asterinoides*	(109)
3101.3230	Cols. solid, strongly parasitic; hc. globose to ovate	*piperis*	(110)

Irenopsis

3301.3220	Cols. dense; hyphae sinuous; hc. entire or subangulose; ps. coiled	*tortuosa*	(111)
3301.3230	Cols. thin; hyphae sinuous; hc. entire or subangulose; ps. uncinate or twisted	*tortuosa* var. *potomorphes*	(112)

Asteridiella

3101.5220	Cols. minute, dense; hc. stellate-lobed; P. very rough	*pipericola*	(113)
3101.4220	Cols. thin; hc. ovoid, entire	*glabroides*	(114)

Meliola

3141.5232	Cols. dense, velvety; hc. piriform, large; ms. 2-3-dichotomous	*pululahuensis*	(115)
3143.3221	Cols. dense, velvety; hc. small, globose; ms. 2-3-dichotomous	*piperis*	(116)
31$^{3}/_{4}$2.4222	Cols. dense, velvety; hc. globose to piriform; ms. less cristate than in type	*gaillardiana* var. *domingensis*	(117)
31¾1.3221	Cols. dense, velvety; hc. globose to piriform; ms. cristate-branched	*gaillardiana*	(118)
31¾1.3221	Cols. looser, subvelvety; hc. globose to piriform; ms. branched or cristate	*patouillardii*	(119)
31¾1.3221	as above; hc. larger; ms. more branched	*zetekii*	(120)
3131.4222	Cols. thin, subvelvety; hyphae undulate; hc. subglobose, small; ms. irregularly dentate	*tumatumariensis*	(121)
31$^{2}/_{3}$1.3221	Cols. thin; hyphae undulate; hc. elongate ovate; ms. uncinate and dentate	*contorta*	(122)
3113.4232	Cols. dense, velvety; hyphae undulate; hc. small, subglobose; ms. obtuse	*piperis-barbati*	(123)
3113.4221	Cols. dense, velvety; hyphae substraight; hc. small, subglobose; ms. acute or obtuse	*microthea*	(124)
3111.4224	Cols. dense, subvelvety; hyphae straight; hc. larger, crenulate; ms. acute	*stenospora* var. *major*	(125)
3111.3223	Cols. thin; hyphae undulate; hc. subglobose, oblong or angulose; ms. obtuse	*paucipes*	(126)
3111.3222	Cols. thin to subdense; hyphae undulate; hc. subglobose, angulose; ms. acute or obtuse;	*stenospora*	(127)

(108) *Amazonia ugandensis* Hansf., Journ. Linn. Soc. London **51**: 266. 1937.

Cols. epiphyllous or rarely also caulicolous, 1—3 mm. diam., very dense, strongly parasitic, causing blackening of host epidermis, which is slightly hypertrophied. Hyphae substraight, branching alternate or unilateral, very acute, becoming almost solid, cells mostly 11—20×7—8 μ. Ch. alternate, straight, antrorse, 17—23 μ long; stc. cuneate, 5—12 μ long; hc. ovate, entire, 10—13×8—10 μ. Mh. rare, mixed with ch., alternate, ampulliform, 14—19×7—9 μ. P. scattered, flattened-globose, covered with radiate mycelial layer, to 350 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—55×15—17 μ.

On *Piper guineense*, Uganda, Hansford 1990, type, 2663, 3348.

(109) *Amazonia asterinoides* (Wint.) Theiss., Ann. Mycol. **11**: 499. 1913.

= *Meliola asterinoides* Wint., Hedwigia **25**: 96. 1886.

= *Meliolaster mackenzii* Doidge, Trans. Roy. Soc. South Africa **8**: 123. 1920.

Cols. epiphyllous, rather thin, to 1 mm. diam. or numerous and confluent. Hyphae substraight, branching usually opposite at wide

angles, loosely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate, spreading, straight or bent, 18—23 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. broadly clavate, rounded-angulose, 12—18×11—14 μ. Mh. mixed with ch., opposite or alternate, 14—22×7—8 μ. P. scattered, to 320 μ diam., covered with a radiate layer of mycelium, flattened-globose. Sp. oblong to subellipsoid, obtuse, 4-septate, 42—47×15—18 μ.

On *Piper* sp., San Thome, Moller, type; Trinidad, Thaxter 7544 (F); — On *P. capensis*, South Africa, PRET 11570.

This species has been reported on many host families in various parts of the tropics; it is safe to say that all records other than those on *Piperaceae* are erroneous, and refer to other species of the genus, or even to genera such as *Asteridiella*.

(110) *Amazonia piperis* (Syd.) Hansf., Sydowia 9: 1. 1955.

= *Actinodothis piperis* Syd., Philipp. Journ. Sci., C, Botany, 9: 174. 1914.

Cols. epiphyllous, rarely also hypophyllous, smooth, dense, to 3 mm. diam., discoid, closely adherent. Hyphae substraight, cells 9—20×7—9 μ, branching irregular, close, acute, forming a solid plate. Ch. alternate or more scattered, closely antrorse, 11—18 μ long; stc. cuneate to cylindric, 2—7 μ long; hc. globose to ellipsoid, entire, 7—13×7—11 μ. Mh. not seen. P. few, developing below the mycelial plate and remaining covered by its radial structure, flattened-conic, to 250 μ diam. and to 150 μ high in centre. Sp. oblong, obtuse, 4-septate, strongly constricted, 33—40×14—17×11—14 μ.

On *Piper retrofractum*, Philippines, PBS 8819 (type), 8851, 9092, 21843, 21928, 23925, 25380, 27751, 27718 (F); — On *P.* sp., Amboina, *Robinson* 2208 (BO).

(111) *Irenopsis tortuosa* (Wint.) Stev., Ann. Mycol. 25: 439. 1927.

= *Meliola tortuosa* Wint. in Gaillard, Le Genre *Meliola*, 1892, p. 67.

Cols. mostly epiphyllous, to 1 mm. diam., subdense, smooth. Hyphae sinuous to crooked, branching opposite or irregular, closely reticulate, cells mostly 15—25×6—7 μ. Ch. alternate, spreading, straight or bent, 13—20 μ long; stc. cylindric, 4—7 μ long; hc. globose, ovate or flattened, often bent, entire, 10—13×10—18 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—22×6—8 μ. P. in close central group, globose, verrucose, to 190 μ diam.; ps. 2—8, erect-spreading, tortuous, obtuse, dark brown, 1—3-septate, smooth, to 100×6—7 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—37×12—14 μ.

On *Piper sidaefolius*, Brazil, Ule 1501 (type), 202 (S); — On *P. umbellatum*, Porto Rico, Heller 6338 (F), Stevens 442, 3152, 3507, 3508, 3379, 3634, 3578, 3917, 4414, 4664, 4721, 4843, 5656, 7316, 5692, 7667, 7669, 7792, 7883, 7887, 7916, 7957, 8028, 8055,

8063, 8146, 8560, 8843, Stevenson 2863 (FIS); — On *P. marginatum*, Venezuela, Sydow, Fung. exot. exs. 799; — On *P. peltatum*, Porto Rico, Whetzel 2635, 2506 (CUP); Trinidad, Stevens 876 (FLS); Porto Rico, Seaver & Chardon 437, Whetzel 591, Chardon 869 (CUP); Venezuela, Cardon & Toro 191 (CUP); Panama, Stevens 1290, 313, 1242, 856, 1130 (FLS); British Guiana, Stevens 235, 107, 108 (FLS); — On *P. caudatum*, Venezuela, Chardon & Toro 794 (CUP); — On *P. medium*, Porto Rico, Stevens 7752 (FLS); — On *P. sanjoseanum*, Panama, Stevens 546, 1015 (FLS); — On *P.* sp., Porto Rico, Stevens 291 (FLS); Grenada, Thaxter 7386 (F).

This species has been reported by various workers on other host families; as far as the present author has been able to check these records from the original specimens, they have been found to be mis-determined.

(112) *Irenopsis tortuosa* (Wint.) Stev. var. **potomorphes** (Cif.) Hansf., comb. n.

= *Meliola tonkinensis* Karst. & Roum. var. *potomorphes* Cif., Ann. Mycol. **31**: 149. 1933.

Cols. epiphyllous, to 2 mm. diam., thin., rarely hypophyllous. Hyphae sinuous to tortuous, branching usually opposite, acute, loosely reticulate, cells mostly 20—30 × 6—7 μ. Ch. alternate, spreading or antrorse, straight or bent, 17—22 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate to globose or transverse, entire, 12—15 × 9—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—27 × 6—9 μ. P. scattered, verrucose, to 220 μ diam.; ps. 2—6, erect-spreading, simple, obtuse, continuous or 1—2-septate, dark brown, the upper part irregularly twisted to uncinate, to 100 × 6—8 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—40 × 14—17 μ.

On *Piper umbellatum*, San Domingo, Ciferri 101, 2070 (S); — On *Potomorphe* sp., Porto Rico, Fink 950 (CUP).

(113) *Asteridiella pipericola* Hansf., Sydowia **10**: 49. 1957.

= *Irenina pipericola* Hansf., Proc. Linn. Soc. London, **157**: 174. 1946.

Cols. minute, epiphyllous and caulicolous, dense, often with single central perithecium. Hyphae substraight, branching alternate or unilateral, rarely opposite, acute, closely reticulate, cells mostly 17—38 × 7—8 μ. Ch. alternate, straight, 23—40 μ long; stc. cuneate to cylindric, 6—15 μ long; hc. irregularly and deeply 3—5-lobed, 18—26 × 12—24 μ. Mh. rare, mixed with ch., alternate, ampulliform. P. in central group, often single, to 190 μ diam., surface cells often extended into short, bluntly conoid processes 10—14 μ high, or merely mammillate. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—52 × 16—20 μ.

On *Piper guineense*, Uganda, Hansford 1990 (type), 1938, 2663, 3348; — On *P. capensis*, Uganda, Hansford 3035, 3609.

(114) **Asteridiella glabroides** (Stev.) Hansf., comb. nov.

= *Meliola glabroides* Stev., Illinois Biol. Monogr. 2: 18. 1916.

= *Irene glabroides* (Stev.) Toro, Mycologia 17: 142. 1925.

= *Irenina glabroides* (Stev.) Stev., Ann. Mycol. 25: 463. 1927.

Cols. amphigenous, mostly epiphyllous, to 8 mm. diam., thin. Hyphae substraight to slightly sinuous, branching opposite at wide angles, loosely reticulate, cells mostly 20—30 × 6—7 μ. Ch. alternate, straight or bent, spreading or antrorse, 20—29 μ long; stc. cuneate, 5—12 μ long; hc. ovoid to clavate or piriform, entire, 13—19 × 11—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19 × 6—9 μ. P. scattered, globose, verrucose, to 200 μ diam., surface cells obtusely conoid, to 18 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—41 × 16—18 μ.

On *Piper aduncum*, Porto Rico, Stevens 3371 (type), 8471, 9039, 7297, 4393, 4394, 8233, 9334, 8133, 9603, 7563, 4930, 8064, 7724, 8633, 3647, 3582, 9472 (FLS), Heller 6204, Whetzel 2601, 2605; (CUP); — San Domingo, Ciferri 2880 (S); Trinidad, Baker & Dale 1328, 1359; — On *P. villiramulum*, Panama, Stevens 116, 117, 1091 (FLS); — On *P. breve*, Panama, Stevens 1001, 752, 1033; (FLS); — On *P. smilacifolium*, Panama, Stevens 1278 (FLS); — On *P.* spp., Costa Rica, Stevens 303; Panama, Stevens 1076; Venezuela, Kern & Toro 1760 (CUP); Trinidad, Stevens 877; British Guiana, Stevens 159, 194; Trinidad, Thaxter 7410 (F).

Stevens (1927) recorded this species on a number of other host families, but as far as the writer has been able to check from his original specimens, it is limited to *Piperaceae*, and the other record of Stevens and other workers refer to species more or less closely related, but distinct.

(115) *Meliola pululahuensis* Gaill., Bull. Soc. Myc. France, 8: 183, 1892.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense, velvety. Hyphae substraight, branching opposite, acute, becoming almost solid, cells mostly 15—30 × 8—10 μ. Ch. alternate, antrorse or spreading, straight or bent, 20—28 μ long; stc. cylindric or cuneate, 3—9 μ long; hc. subglobose to widely piriform, entire, 15—20 × 10—15 μ. Mh. rare, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, scattered, to about 250 μ high by 11—13 μ thick below, 2—3-dichotomous above, the branches, straight, spreading, 1-ry to 100 μ 2-ry to 30 μ, 3-ry to 15 μ, abruptly acute. P. in loose central group, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 49—55 × 15—19 μ, the central cell sometimes distinctly the largest.

On *Piper* sp. Ecuador, Lagerheim, type (P); Sydow, Fung. aequator. 180 (S); Sydow, Fung. exot. exs. 1045 p. p.

(116) *Meliola piperis* Earle, Muhlenbergia **1**: 12. 1901.

Cols. dense, velvety, 5—10 mm. diam., easily secedent, often caulicolous. Hyphae substraight, branching opposite, obtuse, closely reticulate and becoming nearly solid, cells mostly 12—25×6—7 μ. Ch. alternate or to 50% opposite, subantrorse, straight or slightly bent, 11—14 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. globose to oblong, entire, 7—10×6—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 12—16×6—8 μ. Ms. numerous, scattered, to 200 μ high, 6—8 μ thick, 2—3-dichotomous above, branches divergent, 1-ry to 25 μ, 2-ry and 3-ry short, tips acute. P. scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 29—35×10—12 μ.

On *Piper aduncum*, Porto Rico, Heller 4359-b, type; Stevens 758, 5678, 7964, 8603, Kevorkian 66, Whetzel 2601 (CUP); San Domingo, Ciferri 2904 (S); Trinidad, Baker & Dale 345; — On *P. medium*, San Domingo, Ciferri, Mycofl. doming. exs. 94-bis; — On *P.* spp., Cuba, Wright 460 (K); Jamaica, Thaxter 6664, 6671 (F); British Guiana, Stevens 194.

(117) *Meliola gaillardiana* Stev. var. *domingensis* Hansf., Sydowia **9**: 42. 1955.

Cols. amphigenous, dense, velvety, to 3 mm. diam. or confluent. Hyphae substraight to flexuous, branching opposite, obtuse, densely reticulate and nearly solid, cells mostly 10—15×6—8 μ. Ch. alternate or very rarely opposite, subantrorse, straight, 13—18 μ long; stc. cylindric, 2—6 μ long; hc. ovate to piriform, entire, 10—13×8—10 μ. Mh. mixed with ch., fairly numerous, opposite or unilateral, ampulliform, 14—20×7—10 μ. Ms. scattered and grouped around P., straight, to 400×9—10 μ, the apex with 2—4 spreading-reflexed teeth, or short branches to 10 μ, these 2-dentate to 10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—44×17—18 μ.

On *Piper samanense*, San Domingo, Ciferri, Mycofl. doming. exs. 94-ter, type (K).

(118) *Meliola gaillardiana* Stev., Illinois Biol. Monogr. 2: 61. 1916.

Cols. epiphyllous, to 2 mm. diam., dense, velvety. Hyphae undulate to crooked, branching opposite or irregular, close, becoming nearly solid, cells mostly 10—18×7—10 μ. Ch. alternate, straight or bent, antrorse or spreading, 14—20 μ long; stc. cylindric or cuneate, 3—7 μ long; hc. subglobose, piriform or bent, entire, 11—14×8—13 μ. Mh. few, scattered, alternate or opposite, ampulliform, 14—19×6—9 μ. Ms. numerous, straight, to 220 μ high, 8—10 μ thick, apex usually with 2—3 short branches (—12 μ), these cristate-dentate to 12 μ, the whole apical crest 30—35 μ diam., dense. P. in loose central group, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×14—16 μ.

On *Piper aduncum*, Porto Rico, Stevens 7794, (type), 7796, 6802, 8223; San Domingo, Ciferri, Mycofl. doming. exs. 94.

(119) *Meliola patrouillardii* Gaill., Le Genre *Meliola*, 1892, p. 109.

Cols. hypophyllous, subdense, subvelvety, to 10 mm. diam. Hyphae sinuous to crooked, branching irregular, closely reticulate-interwoven, cells mostly 20—30×5—7 μ. Ch. alternate or more scattered, straight or bent, 12—17 μ long; stc. cylindric, 3—5 μ long; hc. subglobose, ovoid or piriform, often bent, entire, 8—13×7—10 μ. Mh. rather few, mixed with ch. or separate, opposite or alternate, ampulliform, 18—25×7—9 μ, neck elongate. Ms. numerous, scattered and grouped around P., to 240×8—10 μ, apex 2—4-furcate to 15 μ and the divergent branches 2—3-dentate to 12 μ, or the primary branches reduced and then the setae cristate with many teeth to 15 μ long; teeth always acute. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—39×11—13×10 μ.

On *Piper* sp., Ecuador, Lagerheim, type (P, S); — On *P. rufescens*, Ecuador, Sydow, Fung. exot. exs. 1144 and Fung. aequator. 250, with setal dentation more condensed than in type; — On *P. urolepidum*, Costa Rica, Standley 43332 (FLS), with ch. about 2% opposite.

Sydow in Ann. Mycol. **37**: 331. 1939, says the type host is *Piper rufescens*.

(120) *Meliola zetekii* Stev., Ann. Mycol. **26**: 192. 1928.

Cols. hypophyllous, to 20 mm. diam., subdense, velvety. Hyphae crooked, branching irregular at wide angles, closely reticulate, cells mostly 10—25×7—9 μ. Ch. alternate or more scattered, spreading or subantrorse, usually straight, 15—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to oblong, entire, often bent, 11—17×9—13 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 14—22×8—10 μ. Ms. numerous, scattered, straight, to 200×9—11 μ, apex cristate with 5—8 short divergent branches to 12 μ long, these with 2—3 divergent teeth to 10 μ long, tips acute. P. scattered, slightly verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—39×11—13 μ.

On *Piper paulownifolium*, Panama, Stevens 645, type (FLS). — On *P.* sp., Trinidad, Thaxter 7499 (F), with sp. 37—42 μ long.

(121) *Meliola tumatumariensis* Hansf., Sydowia Beih. **1**: 118. 1957.

Cols. amphigenous, to 4 mm. diam., thin, subvelvety. Hyphae undulate, branching opposite, acute, loosely to rather closely interwoven-reticulate, cells mostly 25—35×5—6 μ. Ch. alternate or to about 1% opposite, subantrorse or spreading, straight or bent, 13—18 μ; stc. cuneate to cylindric, 3—7 μ long; hc. subglobose to clavate, entire, often more or less bent, 9—12×8—11 μ. Mh. mixed with ch.,

opposite or alternate, ampulliform, 18—28×6—8 μ, neck elongate. Ms. few to numerous, scattered and grouped around P., straight, to 350×7 μ, apex irregularly denticulate, or dentate to 10 μ and often irregularly flexuous. P. scattered, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted slightly, 38—46×11—13 μ.

On *Piper* sp., British Guiana, Stevens 195, t8pe (F, FLS).

(122) *Meliola contorta* Stev., Illinois Biol. Monogr. 2: 32. 1916.

Cols. amphigenous, mostly hypophyllous, to 6 mm. diam., thin. Hyphae substraight, branching opposite, acute, loose, cells mostly 17—30×6—7 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 17—29 μ long; stc. cylindric or cuneate, 5—9 μ long; hc. ovoid to ellipsoid, entire, 13—19×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. few, scattered and around P., to 220×8—10 μ, straight below, the upper part incurved to uncinate, with irregular teeth to 8 μ extending down for about 40 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, slightly constricted, 34—37× 11—12 μ.

On *Piper hispidus*, Porto Rico, Stevens 8225, type (FLS); — On *P.* sp., Trinidad, Thaxter 7544 (F).

(123) *Meliola piperis-barbati* Hansf., Sydowia **9**: 46. 1955.

Cols. mostly hypophyllous, to 2 mm. diam., dense, velvety. Hyphae substraight to flexuous, branching opposite at wide angles, becoming almost solid, cells mostly 10—15×7—9 μ. Ch. alternate or to 10% opposite, subantrorse, straight or bent, 12—20 μ long; stc. cylindric or cuneate, 2—8 μ long; hc. globose to oblong, entire, 9—14× 8—11 μ. Mh. few, mixed with ch., opposite or unilateral, 14—18× 7—9 μ. Ms. numerous, scattered, straight or slightly bent, simple, obtuse to subacute, to 400×7—9 μ. P. in close central group, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—43×14—15 μ.

On *Piper barbatum*, Ecuador, Sydow, Fung. exot. exs. 1045 p. p., type.

(124) *Meliola microthea* Syd., Ann. Mycol. **37**: 331. 1939.

Cols. mostly epiphyllous, dense, velvety, subcrustose, to 1 mm. diam. Hyphae substraight to slightly undulate, branching opposite at wide angles, densely reticulate and becoming solid, cells mostly 10—15×7—9 μ. Ch. alternate or opposite, subantrorse, straight, 12—16 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. subglobose, entire, 8—12×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×8—9 μ. Ms. fairly numerous, straight, simple, obtuse to abruptly acute, to 300×9—10 μ). P. in close central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—46×15—16×13—14 μ.

On *Piper tungurahuana*, Ecuador, Sydow, Fung. aequator. 706, type.

(125) *Meliola stenospora* Wint. var. **major** Hansf., var. nov.

Cols. mostly epiphyllous, to 3 mm. diam. or confluent, subdense, thinly velvety. Hyphae substraight to slightly undulate, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—25×8—10 μ. Ch. alternate, much less than 1% opposite, spreading or antrorse, straight or bent, 17—23 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. subglobose with crenate to lobulate margin, 11—15× 12—20 μ. Mh. separate, opposite or alternate, ampulliform, 17—20× 7—9 μ. Ms. mostly grouped around P., straight, simple, acute, to 1000×10—12 μ. P. in loose central group, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 37—43×13—15× 11—12 μ.

On *Piper* sp., Philippines, PBS 2884, (type), 2990, 23479, 770 (S, K); PBS 32096, 24706, Stevens 61, 1133, 633, 68, 62, 27 (FLS); — On *P. betle*, Philippines, Stevens 526 (CUP, FLS); Java, Raciborski in Herb. Hoehnel (F) sub "*M. betle* Rac.", ined.

(126) *Meliola paucipes* Stev., Illinois Biol. Monogr. **2**: 42. 1916.

Cols. amphigenous, mostly hypophyllous, thin, to 10 mm. diam. Hyphae substraight to undulate, branching opposite or irregular at acute angles, loosely radiating-reticulate, cells mostly 25—35× 6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 16—22 μ long; stc. cylindric, 4—7 μ long; hc. subglobose to oblong, entire or rounded-angulose, straight or bent, 11—17×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—17×7—9 μ. Ms. thinly scattered, straight, simple, obtuse, to 700×9—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—43×14—15 μ.

On *Piper blattarum*, Porto Rico, Stevens 7463, type (FLS); Whetzel 3304 (CUP).

(127) *Meliola stenospora* Wint., Hedwigia **25**: 97. 1886.

= *Meliola piperina* Syd., Ann. Mycol. **14**: 358. 1916.

Cols. epiphyllous in type, amphigenous in other collections, thin to subdense, to 2 mm. diam. Hyphae substraight to slightly undulate or sinuous, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 15—25×6—8 μ. Ch. alternate, spreading, usually straight, 13—22 μ long; stc. cylindric, 3—7 μ long; hc. usually subglobose with 3—4 rounded angles, sometimes shallowly lobate, 8—15×8—15 μ. Mh. separate in centre of colony, opposite or alternate, 12—18×7—9 μ, with narrow elongate neck. Ms. mostly grouped around P., straight, simple, obtuse to acute, to 400×9—12 μ (in some specimens to 500 μ long). P. in close central group, slightly verrucose to almost smooth, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—38×10—12 μ.

On *Piper* sp., San Thomé, Moller, type (S); Uganda, Dummer 618, 2168, Hansford 2182, 2961, 3026; Surinam, Schweinitz (K); Philippines, Baker, Fung. Malay. 367 (= PBS 4046), type of *M. piperina*; — On *P. umbellatum*, Gold Coast, Deighton CB 956; — On *P. guineense*, Gold Coast, Hughes in IMI 45040.

Host Family 30. Chloranthaceae.

(128) *Asteridiella chloranthi* Stev. ex Hansf., Sydowia Beih. **1**: 95. 1957.

Cols. epiphyllous, thin, to 12 mm. diam. or widely confluent, mostly parasitised. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30 × 7—8 µ. Ch. alternate, more or less antrorse, straight or bent, 18—25 µ long; stc. cuneate, 4—8 µ long; hc. broadly triangular with rounded lobes, 13—17 × 11—17 µ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20 × 7—9 µ. P. scattered, globose, glabrous, immature. Sp. subellipsoid, obtuse, 4-septate, constricted, 39—45 × 16—15 µ.

On *Chloranthus officinalis*, Philippines, Stevens 1851, type (CUP, FLS).

Host Family 34. Turneraceae.

(129) *Asteridiella turneracearum* (Cif.) Hansf., Sydowia 10: 51. 1957.

= *Meliola (Irenina) turneracearum* Ciferri, Mycopathologia **7**: 197. 1954.

Cols. hypophyllous, causing decolorised pale-green, effuse leaf-spots about 2 mm. diam.; colonies punctiform, 0.5—1 mm. diam., Hyphae little branched, 3—5 µ wide. Ch. few, scattered, alternate or unilateral; stc. 3—5 µ long; hc. globose, ovate or ellipsoid, 8—12 × 6—9 µ. Mh. not seen. P. globose, almost smooth, 40—65 µ diam. Sp. ellipsoid to ovoid, obtuse, 4-septate, not or slightly constricted, 16—22 × 9—14 µ.

On *Turnera ulmifolia*, San Domingo, Ciferri.

No specimen has become available to me for examination; the differences from typical species of *Meliola* and *Asteridiella* are apparently great, and re-collection is necessary to establish the species securely; the mycelium of narrow hyphae is reminiscent of *Asterina*.

Host Family 36. Capparidaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3402.3230 Cols. dense; hyphae sinuous; hc. oblong, entire to sublobate; ps. acute ..... *capparidicola* var. *opposita* (130)

3403.4230	Cols. dense; hyphae substraight; hc. subglobose, entire; ps. obtuse	*martynii*	(131)
3403.4220	Cols. dense; hyphae substraight; hc. subglobose to angulose; ps. acute	*capparidicola*	(132)
3401.4230	Cols. dense; hyphae straight to undulate; hc. ovate, entire; ps. obtuse	*ciferriana*	(133)
3¾01.4230	Cols. larger, thin; hyphae substraight; hc. entire or lobate; ps. straight to uncinate, obtuse	*bosciae*	(134)

Asteridiella

3103.4230	Cols. dense; hyphae substraight; hc. oblong, entire	*forschhammeriae*	(135)
3103.3220	Cols. dense; hyphae straight to undulate; hc. crenate	*capparidis*	(136)

Meliola

3133.3222	Cols. thin, subvelvety; hyphae substraight; hc. globose to ovate	*capparidis*	(137)

(130) *Irenopsis capparidicola* Batista & Vital var. *opposita* Batista & Maia, Inst. de Micol., Univ. Recife, Publ. 25: 3. 1956. (3402.3230)

Cols. epiphyllous, to 2 mm. diam. or confluent, dense. Hyphae sinuous, cells mostly 9—12×6—8 μ, branching opposite or irregular, closely reticulate. Ch. opposite, subantrorse or spreading, straight or slightly bent, 15—18 μ long; stc. cylindric, 3—6 μ long; hc. oblong, entire, angulose or sublobate, 12—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—27×7—9 μ. P. scattered, to 235 μ diam., slightly verrucose; ps. straight, acute, 50—70×7.5—10 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 32—40×15—17.5 μ.

On *Capparis* sp., Brazil, IMUR 5185, type.

(131) *Irenopsis martynii* Hansf., Sydowia **10**: 44. 1957.

Cols. epiphyllous, very dense, to 1 mm. diam. Hyphae substraight, branching close, acute, alternate or opposite, densely radiating and forming a solid plate, cells mostly 12—16×7—9 μ. Ch. opposite (or alternate where crowded), antrorse, straight or slightly bent, 16—22 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose, entire, 12—16×10—12 μ. Mh. few, mixed with ch., ampulliform, opposite or alternate. P. in close central group, verrucose, to 240 μ diam., surface cells obtusely conoid, projecting to 15 μ; on upper half ps. 3—6, spreading-erect, dark brown, to 90×10 μ, straight, obtuse, continuous or doubtfully 1-septate, upper part with scattered, dark, rough granules; apex paler and sometimes bent, but not uncinate. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 41—46×18—10 μ

On *Capparis cyanophallophora*, Jamaica, Martyn in IMI 31436. type.

(132) *Irenopsis capparidicola* Batista & Vital, Anais Soc. Biol. Pernambuco, **13**: 1955.

Cols. epiphyllous, 0.5 mm. diam., not confluent, smooth, dense. Hyphae substraight, branching opposite, acute, densely reticulate and becoming solid, cells mostly 10—18×7—8 μ. Ch. alternate or opposite, crowded, somewhat antrorse, straight, 13—19 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. globose to piriform, entire or sometimes rounded-angulose, 10—14×8—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—18×7—9 μ. P. scattered, globose, verrucose, to 180 μ diam.; ps. straight, simple, acute, to 70×7—10 μ, 1—2-septate. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×15—17 μ.

On *Capparis cyanophallophora*, Brazil, IMUR 2510, type.

(133) **Irenopsis ciferriana** (Petr.) Hansf., comb. n.

= *Meliola ciferriana* Petr., Ann. Mycol. **30**: 200. 1932.

Cols. amphigenous, to 1½ mm. diam., dense. Hyphae straight or undulate, branched, reticulate, 7—10 μ thick. Ch. numerous, alternate; stc. cylindric, 2—3 μ long; hc. widely ovate, ellipsoid or subglobose, 12—15×10—13 μ. Mh. few, ampulliform, 15—26×7—8 μ. P. single or few in a central group, to 270 μ diam., verrucose; ps. few, straight, to 120×10—13 μ, slightly attenuate to apex. Sp. oblong, obtuse, 4-septate, constricted, 38—46×17—20 μ.

On *Capparis flexuosa*, San Domingo, Ciferri.

No specimens have been avilable to me for comparison with *I. martynii* and other American species on *Capparidaceae*.

(134) *Irenopsis bosciae* (Doidge) Stev., Ann. Mycol. **25**: 435. 1927.

= *Meliola bosciae* Doidge, Trans. Roy. Soc. South Africa, **5**: 731. 1917.

= *Meliola kentaniensis* Doidge, l. c. **8**: 113. 1920.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam. or confluent, thin, Hyphae straight or slightly undulate, branching opposite, acute, loosely reticulate, cells 18—40×6—8 μ. Ch. alternate, more or less antrorse, 14—28 μ long; stc. cylindric or cuneate, 3—10 μ long; hc. clavate and entire to shallowly 2—5-lobate, 11—15×8—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×6—9 μ. P. loosely scattered, globose, to 220 μ diam., ps. 5—15, erect-spreading, rather thick-walled, doubtfully 1—3-septate, simple, obtuse, substraight to uncinate, 60—120×5—7 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×12—16 μ.

On *Maerua* spp. and *Capparis corymbifera*, South Africa, PRET 2510, 9016, 9024, 9539, 11350, 11373, 11880, 12321, 12389, 12406, 17124, 9130, 11730; — On *Capparis afzelii*, Uganda, Hansford 1540, 2387, 3424.

The Uganda specimens differ from the South African in somewhat longer and more uncinate perithecial setae.

135 *Asteridiella toroshammeriae* Hansf., Sydowia **10**: 48. 1957.
= *Irene toroshammeriae* Hansf., Sydowia **9**: 4. 1955.

Cols. amphigenous, dense, to 3 mm. diam. or confluent. Hyphae substraight, branching opposite, acute, closely radiating-reticulate, cells mostly 15—25 × 6—8 μ. Ch. alternate or to 10% opposite, straight or bent, antrorse, 14—23 μ long; ste. cylindric, 3—9 μ long; he. oblong-elavate with rounded apex, rarely rounded-angulose, 10—16 × 8—11 μ. Mh. rather numerous, mixed with ch., opposite, alternate or rarely ternate, ampulliform to conoid, 14—21 × 6—8 μ. P. in loose central group, to 240 μ diam., the surface cells obtusely conoid, projecting to 50 μ. Sp. subellipsoid, obtuse, 4-septate, constricted, 36—44 × 15—17 × 13—15 μ.

On *Toroshammeria bucida*, Mexico, Palmer 1366, type (F): — On *F. pallida*, Mexico, **Palmer**, s. n. (F).

136 *Asteridiella capparidis* (Hansf. & Deight.) Hansf., Sydowia **10**: 47. 1957.
= Irenina capparidis Hansf. & Deight., Mycol. Paper, IMI **23**: 3. 1948.

Cols. amphigenous, to 3 mm. diam., on upper surface dense and subcrustose, thinner on lower surface. Hyphae substraight to sinuous, branching opposite or irregular at wide angles, closely reticulate, cells 20—30 × 6—7 μ. Ch. alternate or more distant, spreading, 15—28 μ long; ste. cylindric or cuneate, 4—7 μ long; he. irregularly crenate, straight or bent, 11—21 × 11—17 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform. P. in central group, to 180 μ diam., surface cells obtusely conoid or produced into subacute tips, up to 20 μ high. Sp. oblong, obtuse, 4-septate, constricted, 37—43 × 15—17 μ.

On *Capparis erythrocarpa*, Sierra Leone, Deighton 2020, type.

137 *Meliola capparidis* Hansf., Proc. Linn. Soc. London **157**: 184. 1945.

Cols. epiphyllous, thin, thinly velvety, to 2 mm. diam. Hyphae substraight, branching opposite, subrectangular, loosely reticulate, cells mostly 12—20 × 6—7 μ. Ch. alternate or to about 5% opposite, spreading or antrorse, straight, 13—18 μ long; ste. cylindric, 2—5 μ long; he. subglobose to wide ovate, entire, 9—12 × 9—11 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 18—21 × 7—10 μ. Ms. thinly scattered and grouped around P., straight, to 360 × 8—9 μ, apex 2—3-dentate to 8 μ. P. scattered, globose, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—40 × 13—16 μ.

On *Capparis atzelii*, Uganda, Hansford 3483, type.

Host Family 39. Cruciferae.

The only species of *Meliolineae* reported as yet on this family

is *Meliola dentifera* Syd., on *?Arabis* sp., Congo Belge, by Beeli (1920). The type host of this species is *Arrabidaea* of family *Bignoniaceae*, and it is unlikely that Beeli's determinations of host and *Meliolineae* correct. No specimen has been available for study.

Host Family 40. Violaceae.

(138) *Asteridiella rinoreae* (Doidge) Hansf., Sydowia **10**: 50. 1957.
= *Irene rinoreae* Doidge, Bothalia **1**: 80. 1922.
= *Irenina rinoreae* (Doidge) Stev., Ann. Mycol. **25**: 468. 1927.

Cols. amphigenous, to 4 mm. diam., dense, sometimes confluent. Hyphae straight, branching opposite or irregular, acute, closely reticulate, cells mostly 15—20 × 6—7 μ. Ch. alternate, antrorse, straight or bent, 17—26 μ long; stc. cylindric, 4—9 μ long; hc. variously lobate, 13—21 × 15—20 μ. Mh. numerous, mixed with ch., opposite or alternate, conoid to ampulliform, 17—20 × 6—6 μ. P. scattered, to 200 μ diam., surface cells conoid or rounded, projecting to 18 μ. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 40—46 × 16—22 μ.

On *Rinorea ardisiaeflora*, South Africa, PRET 12445, 14961, 14969.

(139) *Meliola macrochaeta* Syd., Leafl. Philipp. Bot. **5**: 1538. 1912.
= *Irenopsis macrochaeta* (Syd.) Stev., Ann. Berlin **25**: 438. 1927.

Cols. hypophyllous, 5—15 mm. diam., thin. Hyphae straight or slightly undulate, branching opposite or irregular, acute, loosely reticulate, cells 30—40 × 8—10 μ. Ch. alternate or more scattered, mostly bent, 28—45 μ long; stc. cylindric, 5—20 μ long, sometimes 1-septate; hc. bent ellipsoid, entire or rarely 2—3-lobate, 20—30 × 11—22 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, conoid to ampulliform, 25—45 × 8—10 μ. Ms. almost entirely grouped around P., straight, simple and obtuse, or 2—3-dentate to 30 μ, up to 1200 × 13—15 μ. P. scattered, each on solid disc, surrounded by a few radiating ex-hyphopodiate hyphae, globose, verrucose, to 210 μ diam., devoid of setae. Sp. oblong, obtuse, 4-septate, constricted, 47—58 × 18—21 × 15—17 μ.

On *Alsodeia formicaria*, Philippines, PBS 12887, type (S).

Both Sydow and Stevens were in error in stating the setae were perithecial; all arise from the basal disc and surrounding hyphae, none from the perithecial wall itself.

Host Family 42. Polygalaceae.

Synopsis of accepted species of *Meliolineae*:

Asteridiella

3101.3220 Cols. thin; hyphae sinuous; hc. subglobose ... *monninae* (140)

3½01.3220 Cols. thin; hyphae sinuous; hc. subglobose to angulose; P. very rough ..... *securidacae* (141)

Meliola

3143.4221	Cols. thin; hyphae substraight; hc. ovate, entire; ms. 2-3-furcate to 15 μ	*securidacae* var. *vanderystii*	(142)
3133.3223	Cols. thin; hyphae substraight; hc. ovate, entire; ms. dentate, longer	*securidacae*	(143)
31⅓3.3223	Cols. dense, velvety; hyphae straight to flexuous; hc. ovate to cylindric; ms. obtuse, acute or dentate	*kisantuensis*	(144)
3113.4223	Cols. subdense, velvety; hyphae sinuous; hc. subglobose to clavate, entire; ms. subacute	*carpolobiicola*	(145)
3112.4221	Cols. dense; hyphae straight; hc. oblong, entire; ms. obtuse	*carpolobiae*	(146)

(140) *Asteridiella monninae* (Stev.) Hansf., Sydowia **10**: 49. 1957.
= *Irenina monninae* Stev., Ann. Mycol. **25**: 452. 1927.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae undulate to sinuous, branching alternate or irregular, acute to wide, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, straight or slightly bent, spreading or antrorse, 14—20 μ long; stc. cuneate, 2—6 μ long; hc. subglobose, entire, 11—14×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. P. scattered, to 180 μ diam., surface cells rounded or obtusely conoid, to 12 μ high. Sp. oblong, obtuse, 4-septate, constricted, 28—37×12—15 μ.

On *Monnina rupestris*, Porto Rico, Stevens 50, type (FLS).

(141) *Asteridiella securidacae* Hansf., Sydowia **10**: 50 1957
= *Irenina securidacae* Hansf., Proc. Linn. Soc. London **159**: 23 1948.

Cols. amphigenous, very thin, effuse, to 5 mm. diam. Hyphae sinuous to crooked, branching alternate or irregular, rarely opposite, loosely reticulate, cells mostly 25—30×5—7 μ. Ch. alternate, antrorse, usually straight, 14—19 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose or often rounded-angulose, 9—14×8—13 μ. Mh. separate, opposite or alternate, narrow ampulliform, 18—22×5 μ. P. loosely scattered, to 160 μ diam., very rough; most surface cells conoid, sometimes produced into larviform protuberances with bent obtuse apices and then indistinctly transversely striate, projecting up to 40 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 27—32×11—13 μ.

On *Securidaca welwitschii*, Congo Belge, Hendrickx 3055, type.

This species shows a transition to *Appendiculella*, and often the projections of the surface cells of the perithecium resemble a poor development of the larviform appendages of that genus.

(142) *Meliola securidacicola* Hansf., var. **vanderystii** Hansf., comb. n.
= *Meliola securidacae* Hansf. var. *Vanderystii* Hansf., Sydowia, Beih. **1**: 116, 1957.

Cols. amphigenous, mostly hypophyllous, to 2 mm. diam., thin to subdense. Hyphae substraight to somewhat flexuous, branching opposite at wide angles, loosely to closely reticulate, cells mostly 15—20×5—7 μ. Ch. alternate or opposite in varying proportions, subantrorse or spreading, straight or slightly bent, 12—17 μ long; stc. cylindric, 2—4 μ long; hc. ovate to cylindric, entire, 9—15×6—8 μ. Mh. very few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. loosely scattered and grouped around P., straight, to 280×8—10 μ, apex 2—3-furcate to 15 μ, the branches 2—3-dentate to 6 μ. P. scattered, verruculose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—44×14—16 μ.

On *Securidaca* sp., Congo Belge, Vanderyst 33693, type (BRUX).

(143) **Meliola securidacicola** Hansf., nom. n.

= Meliola securidacae Hansf., Sydowia **10**: 88, 1957. non (Hansf.) Ciferri, Mycopathologia **7**: 88, 1954.

Cols. amphigenous, to 3 mm. diam. or confluent, thin to subdense, thinly velvety. Hyphae substraight to slightly undulate, more crooked on lower surface, branching opposite at wide angles, becoming closely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate or to 5% opposite, spreading or antrorse, straight or slightly bent, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. ovate to piriform, entire, 9—13×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. scattered and grouped around P., straight, to 600×8—9 μ, apex 2—4-dentate to 15 μ. P. scattered, slightly verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—37×13—14×9—10 μ.

On *Securidaca volubilis*, Porto Rico, Whetzel et al. 2619, type; 2559, 2554, 2591 (CUP).

(144) *Meliola kisantuensis* Hansf., Sydowia Beih. I.: 110. 1957.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae straight to flexuous, branching opposite at wide angles, closely reticulate, cells mostly 15—25×6—7 μ. Ch. alternate or opposite, usually bent, 12—17 μ long; stc. cylindric, 2—5 μ long; hc. ovate to bent cylindric, entire, 9—13×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. numerous, scattered and grouped around P., straight, simple and obtuse to subacute, or 2—3-dentate to 7 μ, up to 600×9—10 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted 34—40×13—15 μ.

On *Securidaca* sp., Kisantu, Congo, Vanderyst 33078 (type) (BRUX).

(145) *Meliola carpolobiicola* Hansf. & Deight., Mycol. Paper IMI **23**: 4. 1948.

Cols. amphigenous, velvety, subdense, to 4 mm. diam. or confluent. Hyphae sinuous to flexuous, branching opposite at wide angles, closely reticulate, cells 18—25×6—7 μ. Ch. opposite or about

30% alternate, spreading, 12—15 μ long; stc. cylindric, 3—5 μ long; hc. subglobose to cylindric-clavate, entire, 7—12×7—9 μ Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—28×7 μ, neck elongate. Ms. very numerous, scattered, straight, simple, subacute, to 850×8—9 μ. P. closely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—42×13—16 μ.

On *Carpolobia lutea*, Sierra Leone, Deighton 1572 (type), 1738, 2245; Gold Coast, Deighton CB 801, Hughes in IMI 37253, 37254.

(146) *Meliola carpolobiae* Hansf., Proc. Linn. Soc. London, **157**: 175. 1946.

Cols. amphigenous, to 2 mm. diam., dense. Hyphae straight, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. opposite, densely crowded, 15—22 μ long, straight, spreading or subantrorse; stc. cylindric, 3—5 μ long; hc. cylindric with rounded apex, 12—16×9—12 μ. Mh. mixed with ch., opposite or unilateral, short ampulliform, in some colonies very numerous, 15—20×7—9 μ. Ms. not numerous, scattered, straight, simple, obtuse, to 300×7—9 μ. P. in loose central group, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—43×17—19 μ.

On *Carpolobia alba*, Uganda, Hansford 2567 (type), 3345.

Host Family 43. Trigoniaceae

The only species reported on this host family is *Irenopsis Molleriana* on *Trigonia*, by Pazschke (1892), Rehm (1901) and Theissen (1910); no specimens substantiating these reports have as yet become available to the writer; as the type host of this species is *Malvaceae*, it is extremely unlikely that it occurs on *Trigonia*.

Host Family 57. Polygonaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220	Cols. thin; hyphae substraight; hc. ovate to piriform; ps. obtuse	*rectangularis*	(147)

Asteridiella

3103.4230	Cols. dense; hyphae sinuous; hc. globose to ovate, entire	*polygoni*	(148)
3101.4220	Cols. thin; hyphae undulate; hc. clavate, entire to sublobate	*montecristensis*	(149)

Meliola

31⅓3.5323	Cols. subdense; hyphae substraight; hc. subglobose to piriform	*panamensis* var. *hispaniolensis*	(150)
31⅓2.5323	Cols. dense; hyphae straight; hc. conoid; ms. acute or dentate	*angusta*	(151)

31⅓1.5233	Cols. thin, effuse; hyphae crooked; hc. oblong to angulose; ms. acute or dentate	*panamensis*	(152)
3113.4334	Cols. subdense, velvety; hyphae straight; hc. subglobose to ovate; ms. obtuse to subacute .	*solteroi*	(153)
3113.3221	Cols. thin; hyphae substraight; hc. subglobose to ovate; ms. obtuse.....	*coccolobis*	(154)
3112.5324	Cols. dense; hyphae substraight; hc. clavate, entire; ms. obtuse to acute	*macracantha*	(155)
3112.3222	Cols. thin; hyphae substraight to flexuous; hc. obtusely conoid; ms. obtuse to acute	*angusta* var. *minor*	(156)
3111.5222	Cols. dense, velvety; hyphae substraight; hc. subglobose to piriform; ms. acute	*coccolobae-nodosae*	(157)

Doubtful species: 3101.3220. *Meliola stevensiana* Cif. (158)

(147) *Irenopsis retangularis* (Stev.) Stev., Ann. Mycol. Berlin 25: 436. 1927.

= *Meliola rectangularis* Stev., Illinois Biol. Monogr. 2: 27. 1916.

Cols. epiphyllous, to 10 mm. diam., thin. Hyphae substraight, branching opposite, subrectangular, loosely reticulate, cells mostly 15—25×6—7 μ. Ch. alternate, spreading, straight or bent, 16—22 μ long; stc. cylindric, 3—6 μ long; hc. ovate to piriform, entire, 12—17×7—8 μ. Mh. mixed with ch., mostly alternate, conoid to ampulliform, 16—20×6—7 μ. P. scattered, globose, to 170 μ diam., ps. few, erect-spreading, straight or slightly bent, simple, obtuse, mostly 2-septate, to 80×7—8 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—40×15—17 μ.

On *Coccoloba laurifolia*, Porto Rico, Stevens 7292, type.

(148) *Asteridiella polygoni* Hansf., Sydowia **10**: 49. 1957.

= *Irenina polygoni* Hansf., Reinwardtia 3: 101. 1954.

Cols. amphigenous, dense, to 2 mm. diam. or rarely confluent. Hyphae sinuous to crooked, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or to 5% opposite, straight or bent, 11—15 μ long; stc. cylindric, 2—4 μ long; hc. globose to ovate, entire, 9—12×9—12 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 13—20×7—9 μ. P. scattered, globose, verrucose, to 210 μ diam., surface cells rounded to conoid, projecting to 15 μ. Sp. oblong, obtuse, 4-septate, constricted, 34—41×14—15×11—13 μ.

On *Polygonum chinense*, Java Boedijn 887, type (BO 11983).

(149) *Asteridiella montecristensis* Hansf., Sydowia **10**: 57. 1957.

Cols. amphigenous, to 5 mm. diam. or confluent, thin, smooth. Hyphae undulate to sinuous, especially on lower surface of leaf, branching opposite or irregular at wide angles, mostly 20—25×6—8 μ. Ch. alternate only, spreading, usually bent, 20—28 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. clavate, entire or irregularly angulose

to sublobate, versiform, often bent, 15—20×10—15 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, ampulliform, 17—22× 6—8 μ. P. scattered, verrucose, to 160 μ diam., surface cells obtusely conoid, to 15 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 37—41×16—19 μ.

On *Coccoloba ?buchii*, San Domingo, Ciferri, Mycofl. doming. exs. 301-bis, type.

(150) *Meliola panamensis* Stev., var. *hispaniolensis* Cif., Ann. Mycol. **36**: 218. 1938.

Cols. epiphyllous, to 1 mm. diam., subdense. Hyphae substraight to slightly undulate, branching opposite, acute, closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate or to about 6% opposite, subantrorse, straight or slightly bent, 16—24 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. subglobose to wide piriform, entire, 10—15× 10—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—23×8—10 μ. Ms. scattered, straight, to 800×7—8 μ, apex 3—4-dentate to 10 μ. P. scattered, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, 45—52×18—21 μ.

On *Coccoloba laurifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 234, type (in Herb. Kew copy mixed with *M. angusta*).

(151) *Meliola angusta*, Stev. & Tehon, Mycologia **18**: 5. 1926.
= *Meliola angusta* Stev. & Tehon var. *leptogoni* Cif., Ann. Mycol. **31**: 145. 1933.
= *Meliola leptogoni* (Cif.) Hansf.,
= *Meliola praetervisa* Gaill. var. *stevensii* Hansf., Sydowia **9**: 73. 1955.

Cols. epiphyllous only, dense, with few setae, to 3 mm. diam. Hyphae straight, branching opposite at wide angles, densely reticulate, becoming almost solid, cells mostly 12—20×7—9 μ. Ch. closely crowded, opposite, subantrorse, straight or slightly bent, 15—19 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. conoid, entire, apex attenuate-rounded, straight or slightly recurved, 10—16×8—11 μ. Mh. mixed with ch., mostly in centre of colony, opposite or unilateral, ampulliform, 19—23×8—10 μ. Ms. few, mostly around P., straight, simple and acute when fully mature, or variously dentate to 15 μ, up to 750×9—11 μ. P. scattered, slightly verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—56× 19—22 μ.

On *Coccoloba* sp., British Guiana, Stevens 558, type (FLS).

Stevens and Tehon included the wrong spores in their original description of this species, as 37—39×14—18 μ; their slides show many such spores (34—38×15—17×11—13 μ) germinating on the leaf surface, but these form different hyphopodia and do not develop into colonies, so that the present writer is unable to say to what species they belong. The spores described above were measured from very young colonies showing the typical hyphopodia of *M. angusta*.

Other specimens now included in this species as emended above are:

On *Coccoloba* sp., British Guiana, Stevens 514, 655 p. p.; l. c. Stevens 576, with cols. amphigenous; Porto Rico, Stevens 7066, with spores 46—52×20—25 μ; Jajmaica, Thaxter 6679 (F); — On *C. pyrifolia*, Porto Rico, Stevens 5653-a (FLS); — On *C. costata*, San Domingo, Ciferri Mycofl. doming. exs. 301 (CUP), with scattered setae on mycelium simple, acute, to 750 μ long, and others around P. 2—6-dentate to 6 μ, only to 230 μ long; — On *Leptogonum domingense*, San Domingo, Ciferri, Mycofl. doming. exs. 11-ter.; Ciferri 118 (S).

The following show ms. all simple and obtuse, bent to almost uncinate at the apex:

On *Coccoloba pubescens*, San Domingo, Ciferri 2882 (S); — On *C. costata*, San Domingo, Ciferri 2863 (S); — On *C. pyrifolia*, Porto Rico, Heller s. n. (FLS), Stevens 7065 (FLS, S).

(152) *Meliola panamensis* Stev., Ann. Mycol. **26**: 212. 1928.

Cols. hypophyllous, indefinite, to 60 mm. diam. Hyphae crooked, finely undulate, branching opposite or irregular, acute to wide, becoming closely interwoven-reticulate, cells mostly 25—40×6—7 μ. Ch. alternate, antrorse or spreading, often sharply bent, 20—29 μ long; stc. cylindric, 4—10 μ long; hc. oblong, entire or rounded-angulose, often sinuous to bent, versiform, 13—21×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 22—28×7—8 μ, neck elongate. Ms. numerous, scattered and grouped around P., straight, to 850×9—11 μ, apex simple and acute or irregularly dentate to 15 μ. P. scattered, globose, slightly verrucose, to 230 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 43—53×19—22×15—17 μ, the middle cell slightly the largest.

On *Coccoloba* sp., Panama, Stevens 1256, type (FLS).

(153) **Meliola solteroi** Hansf., sp. nov.

Cols. amphigenous, to 5 mm. diam., subdense, velvety. Hyphae straight, branching opposite, acute, closely radiating-reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or to about 5% opposite, more or less antrorse, straight or slightly bent, 15—20 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. subglobose, ovate or clavulate, entire, 11—14×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—30×7—8 μ neck elongate. Ms. numerous, straight, simple, obtuse to subacute, to 1400×8—10 μ, gradually attenuate upwards, scattered and grouped around P. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×15—17×12—14 μ.

On *Coccoloba caracasana*, Venezuela, Soltero 1536, type (CUP).

(154) *Meliola coccolobis* Stev. & Tehon, Mycologia **18**: 5. 1925.

Cols. hypophyllous, large, spreading, thin, slightly velvety. Hyphae substraight to undulate, branching opposite or irregular loosely interwoven-reticulate, cells mostly 20—25×5—7 μ. Ch.

alternate or opposite, spreading, straight or bent, 12—18 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to narrow ovate, entire, 9—13 × 6—9 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 15—19×6—7 μ. Ms. numerous, scattered, straight or flexuous, simple, obtuse, to 300×6—7 μ, apex often finely undulate, P. scattered, globose, verrucose, to 180 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, slightly, 31—38×13—14×11—12 μ.

On *Coccoloba* sp., British Guiana, Stevens 655 (type), 487; Trinidad, Stevens 903 p. p.

(155) **Meliola macracantha** (Cif.) Hansf., comb. n.

= *Meliola angusta* Stev. var. *macracantha* Cif., Ann. Mycol. **29**: 284, 1931.

Cols. amphigenous, mostly epiphyllous, to 8 mm. diam., dense, thinly velvety. Hyphae substraight, branching close, at wide angles, opposite, densely reticulate and almost solid, cells mostly 20—30× 8—10 μ. Ch. about 90% opposite, closely crowded, antrorse, 15—20μ long; stc. cylindric, 2—5 μ long; hc. broadly clavate, entire, 12—16× 8—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 22—30×8—10 μ. Ms. scattered, simple, straight, obtuse to acute, to 1200×8—11 μ. P. scattered, verrucose, to 185 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—53×17—21 μ.

On *Coccoloba olivascens*, San Domingo, Ciferri, Mycofl. doming. exs. 44, type.

(156) *Meliola angusta* Stev. & Tehon var. **minor** Hansf., n. var.

Cols. hypophyllous, large, irregular, thin, diffuse. Hyphae substraight to flexuous, branching opposite or irregular, acute, loosely reticulate-interwoven, cells mostly 15—25×5—6 μ. Ch. opposite, rarely alternate, antrorse or spreading, 12—17 μ long; stc. cylindric, 3—5 μ long; hc. obtusely conoid, often slightly bent at apex, 9—13× 7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—30 ×6—8 μ. Ms. scattered and grouped around P., straight or flexuous, simple, obtuse to acute, to 360×6—8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—38×15—17×11—13 μ.

On *Coccoloba* sp., British Guiana, Stevens 539, type (F, FLS), 576 p. p. (CUP, FLS); Trinidad, Stevens 903 p. p. (FLS); — On *C. caracasana*, Venezuela, Kern & Toro 1734 (CUP).

Specimens of *Meliola angusta* var. *biserrata* Cif., Mycopathologia 7: 96, 1954, have not been available to the present writer for comparison with the above; it is possible that the two varieties are identical. Ciferri's variety was found in San Domingo on *Leptogonum mollis*, Ekman s. n., type.

(157) *Meliola coccolobae-nodosae* Hansf., Sydowia 9: 13. 1955.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. or confluent. Hyphae substraight or slightly undulate, branching opposite, acute,

closely reticulate, cells mostly 20—25×7—9 μ. Ch. alternate or very rarely opposite (less than 1%), subantrorse, straight, 15—20 μ long; stc. cuneate to cylindric, 2—6 μ long; hc. subglobose to wide piriform, 10—14×10—16 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 13—20×8—10 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 500×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—50×17—20×14—16 μ.

On *Coccoloba nodosa*, San Domingo, Ciferri, Mycofl. exs. 257, type. — On C. sp., Jamaica, Thaxter 7425 (F).

(158) *Meliola stevensiana* Cif., Mycopathologia 7: 189. 1954.

Cols. epiphyllous, 3—8 mm. diam., smooth. Hyphae brown, septate, irregularly branched, 6—8 μ thick. Ch. very few, alternate or unilateral, sessile, spheric to ovoid, 8—12×9—7 μ. Mh. none. P. globose, on a radiate subiculum, 150—170 μ diam. Sp. brown, ovate to ellipsoid, slightly constricted, 4-septate, 32—38×13—16 μ.

On *Coccoloba costata*, San Domingo, Ekman 2914.

The hyphopodia, if described correctly, are not those of any genus of the present group, but most likely belong to *Schiffnerula* or *Clypeolella*, in which case the *Meliola* spores described do not belong to the mycelium. Until this can be re-collected and examined carefully, the species must remain highly doubtful. No specimens have been available to the present author.

Host Family 59. Phytolaccaceae.

Synopsis of accepted species of *Meliolineae: Meliola*

3143.3221	Cols. subdense, subvelvety; hyphae undulate; hc. small, subglobose; ms. 2-3-dichotomous ..	*phytolaccae* var. *dichotoma*	(159)
3133.3221	Cols. dense, velvety; hc. small, subglobose; ms. irregularly dentate.....	*phytolaccae*	(160)
31⅓3.3222	Cols. dense; hyphae undulate; hc. globose to oblong, entire; ms. acute or dentate	*petiveriae*	(161)
3121.4231	Cols. dense, velvety; hyphae undulate; hc. subglobose; ms. arcuate to uncinate, obtuse ..	*phytolaccae-dioicae*	(162)
3113.4231	Cols. dense, subvelvety; hyphae substraight; hc. subglobose; ms. simple, acute	*molfinoi*	(163)
3113.3222	Cols. thin to dense; hyphae straight; hc. subglobose; ms. acute	*incompta*	(164)

(159) *Meliola phytolaccae* Hansf. & Stev. var. *dichotoma* Hansf., Proc. Linn. Soc. London 157: 183. 1946.

Cols. epiphyllous, to 2 mm. diam., subdense, thinly velvety. Hyphae sinuous, branching opposite at wide angles, closely reticulate, cells mostly 15—20 ×5—6 μ. Ch. alternate or to 20% opposite, sub-

antrorse, straight or slightly bent, 12—17 μ long; stc. cylindric or cuneate, 3—6 μ long; hc. subglobose, entire, 9—12 μ diam. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—19×7—8 μ. Ms. numerous, scattered, straight, to 170×8—10 μ, 2—3-dichotomous above, the branches spreading, 1-ry to 35 μ, 2-ry to 20 μ, 3-ry to 15 μ, acute. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—39×11—14 μ.

On *Phytolacca dodecandra*, Uganda, Hansford 3426, type.

(160) *Meliola phytolaccae* Hansf. & Stev., Journ. Linn. Soc. London **51**: 279. 1937.

Cols. epiphyllous, rarely also on lower surface, 1—4 mm. diam., very dense, velvety. Hyphae slightly undulate, branching alternate or irregular, at wide angles, densely reticulate and almost solid, cells mostly 12—17×6—8 μ. Ch. alternate or about 20% opposite, crowded, antrorse, 14—19 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, entire, 9—15 μ long and wide. Mh. mixed with ch., alternate or opposite, not numerous, ampulliform, 15—20×7—8 μ. Ms. very numerous, closely scattered, straight, to 230×7—9 μ, apex irregularly cristate-dentate to 10 μ, or rarely irregularly 2-furcate with the short branches dentate. P. crowded in central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—39×11—15 μ.

On *Phytolacca dodecandra*, Uganda, Hansford 1324 (type), 1825, 2049, 2086, 2270, 2444, 2950, 3545.

(161) **Meliola petiveriae** Hansf., sp. n.

Cols. mostly epiphyllous, dense, to 2 mm. diam. Hyphae more or less undulate, branching opposite at wide angles, becoming densely reticulate, cells mostly 12—18×6—7 μ. Ch. alternate or to about 5% opposite, antrorse or spreading, often reflexed-bent, 13—17 μ long; stc. cylindric, 2—5 μ long; hc. globose to oblong, entire, often bent, 10—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×8—9 μ. Ms. not numerous, scattered, straight, simple and acute or 2—3-dentate to 8 μ, up to 400×8—9 μ. P. loosely grouped in centre of colony, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—37×13—15×11—12 μ.

On *Petiveria alliacea*, Porto Rico, Stevens 415, type (FLS).

(162) *Meliola phytolaccae-dioicae* Hansf., Sydowia Beih. **1**: 114. 1957.

Cols. epiphyllous, dense, to 3 mm. diam., velvety. Hyphae undulate, branching opposite at acute to wide angles, closely reticulate, cells mostly 15—25×6—7 μ. Ch. alternate or very rarely (less than 1%) opposite, subantrorse, straight, 13—16 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. globose, entire, 10—12×9—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 12—18×6—8 μ. Ms. numerous, scattered, simple, obtuse, arcuate to uncinate in upper

half, to 300×9 μ. P. subaggregate in centre of colony, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—41×13—15 μ.

On *Phytolacca dioica*, Brazil, Ule, Herb. brasil. 1138, type (F).

(163) *Meliola molfinoi* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 381. 1924.

Cols. epiphyllous, dense, subvelvety, to 3 mm. diam. Hyphae slightly sinuous, branching opposite, acute, closely reticulate, cells mostly 15—20×6—8 μ. Ch. alternate or opposite in varying proportions, antrorse, straight, 12—17 μ long; stc. cylindric, 2—6 μ long; hc. globose to shortly clavate, entire, 10—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—22×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 220×9—11 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×13—14 μ.

On *Achatocarpus* sp., Paraguay, Balansa 2745, type (SPEG).

(164) *Meliola incompta* Syd., Ann. Mycol. **18**: 98. 1920.

Cols. epiphyllous, often confluent, thin to subdense. Hyphae substraight, branching opposite at wide angles, closely reticulate, becoming almost solid in centre, cells mostly 15—20×6—8 μ. Ch. opposite or alternate, subantrorse, straight or bent, 13—17 μ long; stc. cylindric, 3—5 μ long; hc. subglobose to wide ovate, 9—13×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—9 μ. Ms. scattered, straight, simple, acute, to 600×8—10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—42×13—15 μ.

On *Phytolacca* sp., Philippines, PBS 6696, type; — On *Hilleria latifolia*, Gold Coast, Deighton CB 959.

Host Family 63. Amarantaceae.

(165) *Meliola chamissoae* Hansf., Sydowia **9**: 60. 1955.

Cols. amphigenous, dense, to 4 mm. diam. or confluent, subvelvety. Hyphae crooked, branching opposite at wide angles, closely reticulate, cells mostly 12—20×6—7 μ. Ch. alternate or opposite, straight or bent, subantrorse, 12—17 μ long; stc. 2—6 μ long, cylindric; hc. subglobose to ovate, entire, 8—13×7—10 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 15—20×7—8 μ. Ms. scattered and grouped around P., straight, to 350×7—8 μ, apex usually 2-dentate to 10 μ, less commonly simple and acute. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—36×12—14 μ.

On *Chamissoa altissima*, Honduras, Standley 55274, type (F).

Host Family 65. Linaceae.

Synopsis of accepted species of *Neliolineae:*

Meliola			
31¾3.4221	Cols. dense, subvelveta; hc. ovate to subglobose; ms. irregularly furcate to 30 μ	*linacearum*	(166)
3113.4221	Cols. dense; hc. larger, subglobose to ovate; ms. simple, acute	*ochthocosmicola*	(167)
3113.3223	Cols. thin to subdense, subvelvety; hc. ovate to cylindric; ms. acute	*hugoniae*	(168)
3111.5222	Cols. dense, velvety; hc. large, cylindric, clavate or angulose; ms. acute	*ochthocosmi*	(169)

(166) *Meliola linacearum* Hansf. & Deight., Mycol. Paper, IMI **23**: 6. 1948.

Cols. epiphyllous, dense, thinly velvety, to 3 mm. diam. Hyphae straight to slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate or to 30% opposite, straight, spreading, 12—16 μ long; stc. cylindric, 2—6 μ long; hc. ovate to subglobose, entire, 9—12×7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. numerous, scattered, straight or slightly flexuous, to 200×7—9 μ, apex irregularly dentate-furcate, often irregularly 2-dichotomous to 30 μ, ultimate teeth acute. P. scattered, verrucose to almost smooth, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 36—42×13—16 μ.

On *Ochthocosmus africanus*, Sierra Leone, Deighton 1661 (type), 1028, 1581, 2006, 2364, 1807, 437, 2363, 2365; Gold Coast, Hughes in IMI 42190, 42133, 42123.

(167) *Meliola ochthocosmicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 5. 1948.

Cols. epiphyllous, dense, crustose, easily secedent, to 1.5 mm. diam. Hyphae straight, branching opposite at wide angles, densely reticulate and almost solid, cells mostly 15—20×7—8 μ. Ch. opposite or to about 30% alternate, straight or slightly antrorse-bent, 17—24 μ long; stc. cylindric, 4—9 μ long; hc. subglobose to piriform, entire, 12—18×9—13 μ. Mh. rare, mixed with ch., alternate or opposite, ampulliform, 15—20×8—10 μ. Ms. scattered, straight, simple, acute, to 260× 9—11 μ. P. closely scattered, verrucose, to 195 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 45—48×18—20 μ.

On *Ochthocosmus africanus*, Sierra Leone, Deighton 1216, type.

(168) *Meliola hugoniae* Hansf. & Deight., Mycol. Paper, IMI **23**: 5. 1948.

Cols. epiphyllous, to 6 mm. diam., thin to subdense, thinly velvety. Hyphae straight, branching opposite at wide angles, loosely to rather closely reticulate, cells mostly 15—25×6—7 μ. Ch. opposite or about 25% alternate, straight or slightly bent, 12—17 μ long; stc.

cylindric, 2—5 μ long; hc. oblong to ovate, entire, straight or slightly bent, 9—14×6—8 μ. Mh. numerous, mixed with ch., alternate or opposite, ampulliform, 14—18×6—8 μ. Ms. biform: (a) around P., 150—190×8—10 μ, (b) scattered over mycelium, to 960×9—10 μ, all simple, straight, acute. P. scattered, each on loose disc of radiating hyphae to 100 μ long, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—36×12—14 μ.

On *Hugonia planchonii*, Sierra Leone, Deighton 1361 (type), 1995, 2258; Gold Coast, Hughes in IMI 44095.

(169) *Meliola ochthocosmi* Hansf. & Deight., Mycol. Paper, IMI **23**: 5. 1948.

Cols. hypophyllous, dense, velvety, to 10 mm. diam. or confluent. Hyphae crooked, branching opposite or irregular at varying angles, densely reticulate-interwoven, cells mostly 25—30×6—8 μ. Ch. alternate only, straight or arcuate, 17—32 μ long, spreading or antrorse; stc. cylindric, straight or bent, 5—12 μ long; hc. cylindric to clavate or irregularly rounded-angulose, 12—22×8—14 μ, versoform. Mh. mixed with ch., alternate, ampulliform, 18—24×7—8 μ. Ms. numerous, scattered, straight or slightly flexuous, simple, acute, to 400×8—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—50×16—20 μ.

On *Ochthocosmus africanus*, Sierra Leone, Deighton 1760 (type), 1501.

Host Family 66. Zygophyllaceae.

(170) *Meliola capilligera* Cif., Ann. Mycol. **31**: 154. 1935.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae substraight, branching opposite, acute, closely reticulate and almost solid, cells mostly 15—25×7—9 μ. Ch. alternate or in some colonies to 20% opposite, subantrorse, straight or bent, 20—33 μ long; stc. cylindric or cuneate, 4—12 μ long; hc. irregularly and dee'ply lobate, versiform, 14—22×10—18 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—25×7—9 μ. Ms. numerous, simple, acute, to 350×9—12 μ, the upper part broadly arcuate to uncinate. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—52×18—21 μ.

On *Guaiacum officinale*, San Domingo, Ciferri 2839 (type), 2849, 2245; Ciferri, Mycofl. doming. exs. 143; Ciferri in Petrak, Mycoth. gener. 1233.

Host Family 71. Balsaminaceae.

(171) *Meliola impatientis* Doidge, Bothalia **4**: 196. 1941.

Cols. amphigenous, mostly epiphyllous, thin, to 2.5 mm. diam. Hyphae undulate, branching alternate, acute, loosely radiating-

reticulate, cells mostly 15—25×6—8 μ. Ch. alternate, straight, antrorse, 16—23 μ long; stc. cylindric, 4—6 μ long, rarely to 15 μ; hc. subglobose to irregular, often 2—3-rounded-angulose or sublobate, 11—15 μ long and wide. Mh. separate in centre, opposite or alternate, ampulliform, 20—25×6—8 μ. Ms. mostly around P., straight, simple, obtuse to subacute, to 300×8—9 μ. P. scattered, globose, verrucose, to 220 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 35—40×12—15 μ.

On *Impatiens capensis*, South Africa, PRET 28348, type.

(172) *Meliola impatientis* Doidge var. *densa* Hansf., Proc. Linn. Soc. London, **159**: 25. 1947.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense, subvelvety, subcrustose. Hyphae undulate to crooked, branching alternate or irregular, closely reticulate and almost solid, cells mostly 15—25×8—10 μ. Ch. alternate, subantrorse, straight or bent, 17—23 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to irregularly angulose, rarely sublobate, 12—18×13—18 μ. Mh. few to numerous, separate, opposite or alternate, conoid to ampulliform, 16—20×8—10 μ. Ms. numerous, closely scattered, straight, simple, subacute to obtuse, to 400×10—12 μ. P. in close central group, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—47×15—18 μ.

On *Impatiens* sp., Kivu, Congo Belge, Hendrickx 3191, type.

Host Family 72. Lythraceae.

(173) *Irenopsis lagerstroemiae* Batista & Nascimento, Inst. de Micol., Univ. do Recife, Publ. **25**: 5. 1956.

Cols. epiphyllous, less commonly amphigenous, thin, 2—3 mm. diam. Hyphae substraight to undulate or sinuous, branching opposite, acute, loosely reticulate-interwoven, cells mostly 20—30×5—6 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 11—16 μ long; stc. cuneate to cylindric, 3—4 μ long; hc. subglobose, entire, 9—12×9—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 11—17×6—8 μ. P. scattered, verrucose, to 170 μ diam., with 0—8 setae from sides and upper half, erect-spreading, becoming clear brown, simple, obtuse, 1—2-septate, smooth with rather thick wall, to 100×5—7 μ, the upper part from straight to subuncinate or flexuous. Sp. oblong, obtuse, 4-septate, constricted, 29—33×12—14 μ.

On *Lagerstroemia indica*, Brazil, Batista in IMUR 5043, type.

(174) *Irenopsis lagerstroemiae* B. & N. var. *major* Hansf., Sydowia Beih. **1**: 94. 1957.

Cols. epiphyllous only, very thin, scarcely visible, 0.5—1 mm. diam. Hyphae substraight to undulate or flexuous, branching opposite or irregular, acute to wide, loosely reticulate, cells mostly 30—40×6—7 μ. Ch. alternate, more or less antrorse, straight or slightly bent,

16—22 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. subglobose to ovate, entire, 10—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×7—9 μ. P. few, scattered, verrucose, to 170 μ diam., surface cells obtusely conoid, to 13 μ high; ps. 0—3, spreading-erect, straight below, bent at obtuse, simple apex, smooth, 1—2-septate, to 125×6—7 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—39×15—17 μ.

On *Lagerstroemia indica*, Brazil, Batista in IMUR 5043 p. p., type (mixed with species type).

Host Family 81. Thymeleaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4220	Cols. dense; hyphae undulate; hc. ovate to piriform	*wikstroemiae*	(175)

Irenopsis

3401.4230	Cols. dense; hyphae substraight; hc. globose to clavate or anulose; ps. obtuse, flexuous	*mysorensis*	(176)
3301.5330	Cols. dense; hyphae substraight; hc. crenate to lobate; ps. obtuse, bent to uncinate	*masakensis*	(177)

Asteridiella

2101.4230	Cols. subdense; hyphae sinuous; hc. lobate	*peddieae*	(178)
3101.4220	Cols. subdense; hyphae undulate; hc. subglobose to piriform, entire	*aibonitensis*	(179)

Meliola

31 3.4222	Cols. dense; hyphae substraight; hc. ovate to oblong, entire; ms. acute or dentate	*peddiicola*	(180)
3111.3223	Cols. thin; hyphae substraight to undulate; globose to ovate; ms. acute	*wikstroemiicola*	(181)

(175) *Amazonia wikstroemiae* Hansf., Sydowia Beih. 1: 93. 1957.

Cols. amphigenous, to 1 mm. diam., often numerous and subconfluent, smooth, dense. Hyphae undulate, branching alternate or irregular, closely radiating-reticulate, cells mostly 10—15×6—8 μ. Ch. alternate, subantrorse, straight or slightly bent, 15—22 μ long; stc. cuneate, 3—8 μ long; hc. ovate to piriform, entire, 11—16×8—11 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 17—22×6—8 μ. P. single or 2—3 coalescent in centre of colony, orbicular, flattened-globose beneath a radiate covering of mycelium, edge very slightly fimbriate, to 400 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—44×17—19 μ.

On *Wikstroemia foetida*, Hawaii, Stevens 635, type (FLS); — On *W. phillyriaefolia*, Hawaii, Stevens 629; — On *W. elongata*, Hawaii, Stevens 610; — On *W.* sp., Hawaii, Stevens 479, 2148.

(176) *Irenopsis mysorensis* Hansf. & Thirum., Farlowia **3**: 287. 1948.

Cols. epiphyllous, rarely also hypophyllous, dense, numerous, to 1 mm. diam. Hyphae substraight to undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, usually straight, 15—22 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. globose to wide clavate, entire or rarely angulose, 10—15×10—14 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 15—21×6—8 μ. P. in close central group, verrucose, to 215 μ diam., surface cells obtusely conoid; ps. 0—5, erect-spreading, dark brown, simple, obtuse, irregularly flexuous but not uncinate, to 60×6—7 μ, 0—1-septate, Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—45×14—18 μ.

On *Lasiosiphon ericocephalus*, Mysore, Thirumalachar 873, type.

(177) *Irenopsis masakensis* Hansf., Proc. Linn. Soc. London, **152**: 8. 1941.

Cols. amphigenous, to 1 mm. diam., dense, subcrustose. Hyphae straight to slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 12—20×6—9 μ. Ch. alternate, subantrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. irregularly crenate-lobate, 13—22×11—20 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—21×7—9 μ. P. in close central group, verrucose, to 230 μ diam., surface cells rounded to conoid; ps. 3—6, erect-spreading, simple, obtuse, the surface rough with dark granules, to 140×7—8 μ, apex bent to uncinate. Sp. oblong, obtuse, 4-septate, constricted, 45—52×19—22 μ.

On *Peddiaea fischeri*, Uganda, Hansford 2112 (type), 2119, 3594.

(178) *Asteridiella peddieae* (Doidge) Hansf., Sydowia **10**: 49. 1957.
= *Irene peddieae* Doidge, Bothalia 2: 235. 1927.
= *Irenina peddieae* (Doidge) Stev., Ann. Mycol. 26: 383. 1928.

Cols. amphigenous, mostly epiphyllous, to 10 mm. diam., subdense. Hyphae sinuous, branching opposite at wide angles, closely reticulate, cells mostly 30—35×6—7 μ. Ch. alternate, 24—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. irregularly 2—4-lobate, 17—22×15—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—20×6—7 μ. P. scattered, slightly verrucose, to 240 μ diam., glabrous. Sp. oblong, straight or slightly bent, 3-septate, 40—44×15—17 μ, ends obtuse.

On *Peddiea africana*, South Africa, PRET 11840, 17777.

(179) *Asteridiella aibonitensis* (Stev.) Hansf., Sydowia **10**: 46. 1957.
= *Meliola aibonitensis* Stev., Illinois Biol. Monogr. 2: 16. 1916.
= *Irene aibonitensis* (Stev.) Toro, Mycologia **17**: 140. 1925.
= *Irenina aibonitensis* Stev., Ann. Mycol. **25**: 451. 1927.

Cols. amphigenous, to 3 mm. diam., subdense. Hyphae undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—25×6—9 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 17—23 μ long; stc. cylindric, 3—8 μ long; hc. subglobose to piriform, entire, 12—16×10—13 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 14—20×7—9 μ. P. scattered, each surrounded by radiating hyphae and in early stages simulating Amazonia, finally globose, slightly verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×17—18 μ.

On *Daphnopsis* sp., Porto Rico, Stevens 8470, type (FLS).

(180) *Meliola peddiicola* Hansf., Proc. Linn. Soc. London **159**: 26. 1947.

Cols. amphigenous, mostly epiphyllous, dense, to 5 mm. diam. Hyphae straight or slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—20×7—8 μ. Ch. alternate or to 20% opposite, subantrorse, straight or bent, 14—20 μ long; stc. cylindric, 2—6 μ long; hc. ovate to cylindric with rounded apex, entire, 10—15×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—20×8—10 μ. Ms. scattered and also grouped around P., straight, simple and acute or usually 2—4-dentate to 10 μ, those around P. somewhat shorter and more dentate, to 400×7—9 μ. P. in loose central group or scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—43×14—17 μ.

On *Peddiea fischeri*, Uganda, Hansford 3705 (type), 3704; — On *P. africana*, South Africa, PRET 32465; — On *Dicranolepis disticha*, Sierra Leone, Deighton 4446.

(181) *Meliola wikstroemiicola* Hansf., Sydowia **11**: 62. 1958.

Cols. amphigenous, thin, to 2 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 25—35×6 μ. Ch. alternate, subantrorse, straight or slightly bent, 14—22 μ long; stc. cuneate, 3—5 μ long; hc. globose to ovate, entire, 9—15×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×7 μ. Ms. scattered thinly and grouped around P., straight, simple, acute or subacute, to 530×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—37×12—14 μ.

On *Wikstroemia* sp., Philippines, Stevens 987 (type), PBS 29571 (FLS).

Host Family 83. Nyctaginaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3112.4223	Cols. dense, velvety; hc. ovate, entire; ms. acute	*pisoniae*	(182)
3111.3211	Cols. thin; hc. subglobose to ovate; ms. obtuse	*pisoniicola*	(183)

In addition, Spegazzini (1919) reported *Meliola pulchella* and *M. eriophora* on *Pisonia* in South America; almost certainly these were mis-determinations, as these species occur on *Myrtaceae* and *Moraceae* respectively. No specimens to substantiate these reports were found in SPEG., nor has the present author been able to trace any specimens of *Meliola* on this host in the New World.

(182) *Meliola pisoniae* Stev. & Rold., Philipp. Journ. Sci. 56: 62. 1935.

Cols. hypophyllous, dense, velvety, to 3 mm. diam. Hyphae straight to sinuous, branching irregular at wide angles, densely reticulate, cells mostly 10—15×6—7 μ. Ch. opposite, closely crowded, straight, antrorse, 10—14 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. globose to ovate, entire, 8—11×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22×7—8 μ. Ms. numerous, scattered, straight, simple, acute, to 530×9—10 μ (teste Stevens to 730 μ). P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, constricted, 44—50×17—18×11—13 μ.

On *Pisonia umbellifera*, Philippines, Stevens 373, 425, 25, 41, PBS 32158, 30925, 35911 (FLS).

(183) *Meliola pisoniicola* Stev. & Rold., Philipp. Journ. Sci., 56: 69. 1935.

Cols. thin, diffuse, to 10 mm. diam. Hyphae undulate to somewhat crooked, branching opposite, acute, loosely reticulate, cells mostly 18—35×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 13—17 μ long; stc. cylindric to cuneate, 4—6 μ long; hc. subglobose to ovate, entire, 9—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×6—7 μ. Ms. scattered, straight or slightly bent, simple, obtuse, to 240×6—7 μ. P. scattered, slightly verrucose, to 90 μ diam., immature. Sp. oblong, obtuse, 4-septate, constricted, 27—33×10—13 μ.

On *Pisonia* sp., Philippines, Stevens 1813, type (CUP, FLS).

Host Family 84. Proteaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4230	Cols. thin; hyphae sinuous; hc. subglobose to angulose; ps. straight, obtuse	*rupalae*	(184)

Meliola

3131.5333	Cols. thin, subvelvety; hyphae undulate; hc. subglobose, entire; ms. dentate-cristate	*heliciae*	(185)
31⅓3.4222	Cols. thin to subdense; hyphae substraight; hc. subglobose to oblong, entire; ms. obtuse, acute or dentate	*banksiae*	(186)
2111.6342	Cols. dense, velvety, crustose; hyphae crooked; hc. ovate to sublobate; ms. obtuse to subacute	*lanosa*	(187)

2111.6343	Cols. dense, subvelvety; hyphae flexuous; hc. deeply lobate; ms. subacute	*lanosa* var. *funerea*	(188)
3111.5321	Cols. dense; hyphae crooked; hc. globose to piriform, entire; ms. obtuse	*grevilleae*	(189)
3111.4322	Cols. dense, subvelvety; hyphae crooked; hc. ovate to clavate, angulose to sublobate; ms. acute	*heliciicola*	(190)

(184) *Irenopsis rupalae* (Speg.) Stev., Ann. Mycol. 25: 434. 1927.
= *Meliola rupalae* Speg., Anal. Mus. Nac. Buenos Aires **31**: 349. 1924.

Cols. epiphyllous, thin, to 1 mm. diam., smooth. Hyphae undulate to sinuous, branching opposite or irregular, acute, loosely radiating-reticulate, cells mostly 25—30×6—7 μ. Ch. alternate, antrorse, straight or bent, 15—24 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose to piriform, entire or slightly angulose, 11—17×9—14 μ. Mh. mixed with ch., alternate or opposite, ampulliformm 15—20×7—9 μ. P. scattered, globose, verrucose, to 250 μ diam.; ps. 2—8, straight, simple, obtuse, continuous, smooth, dark brown, to 100×8 μ. Sp. oblong, obtuse, 4-septate, constricted, 37—45×17—19×13—14 μ.

On *Rupala* sp., Argentina, Herb. Speg. 507, type.

(185) *Meliola heliciae* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 54. 1941.

Cols. hypophyllous, subvelvety, thin, to 15 mm. diam. Hyphae undulate, branching opposite or irregular, loosely reticulate, cells mostly 18—40×7—9 μ. Ch. alternate or more scattered, straight or bent, 20—27 μ long; stc. cylindric. 5—8 μ long; hc. oblong, ellipsoid subglobose, entire, 14—21×10—14 μ. Mh. mixed with ch., opposite or alternate, narrow ampulliform, 21—32×7—9 μ. Ms. mostly around P., straight, to 770×9—11 μ, apex variously dentate to cristate, the teeth to 20 μ long. P. in central group, verrucose, to 225 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 46—53×16—24 μ.

On *Helicia formosana*, Formosa, Yamamoto, type (IMI).

(186) *Meliola banksiae* Hansf., Sydowia **11**: 53. 1958.

Cols. epiphyllous, to 5 mm. diam. or confluent, thin to subdense. Hyphae slightly undulate, branching opposite at wide angles, becoming closely reticulate, cells mostly 20—30×7—9 μ. Ch. alternate, or to about 3% opposite, straight or bent, antrorse, spreading or rarely retrorse, 18—23 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose to oblong, entire, 13—18×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×7—8 μ, very numerous in some colonies. Ms. thinly scattered and grouped around P., straight, to 330×7—8 μ, simple and obtuse to acute, or 2—3-dentate to 10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—46×16—19 μ.

On *Banksia dentata*, Papua, Shaw 830 p. p., type (WARI 7757).

(187) *Meliola lanosa* Pat., Rev. Mycol. **10**: 136. 1888.

Cols. amphigenous, dense, velvety, crustose, to 4 mm. diam. Hyphae crooked, branching opposite or irregular, acute, densely reticulate-interwoven, cells mostly 20—35×7—8 μ. Ch. alternate, straight or often irregularly bent, 23—38 μ long; stc. cylindric, 6—22 μ long; hc. ovate, irregularly bent, angulose or shallowly rounded-lobulate, versiform, 15—21×10—15 μ. Mh. not seen. Ms. numerous, scattered, substraight, simple, obtuse to subacute, to 400×9—10 μ. P. scattered or loosely aggregate, verrucose, to 310 μ diam. Sp. slightly bent, fusoid, obtuse, 3-septate, slightly constricted, 60—68×20—23 μ.

On *Lomatia* sp., Chile, Montagne, type (P); — On *L. obliqua*, Chile, SPEG 26596, 25697.

(188) *Meliola lanosa* Pat. var. **funerea** (McAlp.) Hansf., comb. n.
= *Meliola funerea* McAlpine, Proc. Linn. Soc. NSW **21**: 104. 1896.
= *Meliola negeriana* Syd., Ann. Mycol. **2**: 170. 1904.

Cols. amphigenous, mostly epiphyllous, dense, subvelvety, to 2 mm. diam. or confluent. Hyphae undulate to irregularly flexuous, branching opposite or irregular, acute, densely radiating-reticulate, interwoven, cells mostly 20—30×8—10 μ. Ch. alternate, irregularly bent, antrorse or spreading, 25—40 μ long; stc. cuneate to cylindric, bent, 9—16 μ long; hc. deeply 3—5-lobate, versiform, 22—29× 18—29 μ, often bent and inserted laterally on stc. Ms. numerous, straight, subacute, to 530×9—10 μ. Mh. not seen. P. loosely scattered to subaggregate in centre, verrucose, to 260 μ diam. in type (up to 420 μ in other Australian specimens). Sp. bent cylindric, obtuse, 3-septate, constricted, 50—64×20—24 μ.

On *Grevillea robusta*, New South Wales, Warden, 1896 (type); — On *Lomatia arborescens*, l. c., Fraser 141, 204; — On *L. myricoides*, l. c., Fraser 48; — On *L. silaefolia*, l. c., Fraser 123; — On *L. obliqua*, Chile, Neger, type of *M. negeriana* (S), Rehm, Ascomyc. 1572 (S); — On *L. fraseri*, Victoria, French, 1913; — On *L.* sp., Victoria, Dixon, 1930; — On *Stenocarpus salignus*, New South Wales, Fraser 110, 223; — On *Orites excelsa*, l. c., Fraser 109; — On *Telopea oreades*, Victoria, Pescott in Dept. Agric. Vict. 1751, 1752.

(189) *Meliola grevilleae* Hansf., Sydowia **11**: 56. 1958.

Cols. amphigenous, to 2 mm. diam., dense, almost smooth; on lower surface hidden by leaf-hairs with only perithecia and setae showing. Hyphae substraight to undulate above, very crooked below, branching opposite or irregular at wide angles, closely reticulate, cells 12—25×7—9 μ. Ch. alternate, spreading or subantrorse, straight or bent, 19—27 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. globose to piriform, entire, 14—19×12—14. Mh. few, mixed with ch., alternate, ampulliform, 18—24×7—9 μ. Ms. mostly grouped

around P., few, often none, more or less straight, simple, obtuse, to 180×7—8 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, rather deeply constricted, 45—51× 20—22×15—17 μ.

On *Grevillea robusta*, New Guinea, Shaw 672, type (WARI 7773).

(190) *Meliola heliciicola* Hansf., Sydowia **11**: 57. 1958.

Cols. amphigenous, mostly hypophyllous, dense, subvelvety, to 2 mm. diam. Hyphae undulate to crooked, branching alternate or irregular, acute, densely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate, subantrorse, usually irregularly bent, 22—35 μ long; stc. cuneate to cylindric, 6—14 μ long; hc. ovate to irregularly clavate, versiform, often bent, margin angulose to sublobate, 15—22×12—20 μ. Mh. separate, mostly alternate, ampulliform, 20—26×8—10 μ, neck elongate. Ms. scattered and grouped P., straight, simple, acute, to 430×9—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 44—50×18—22 μ.

On *Helicia* sp., Philippines, Stevens 1196, type (FLS).

Host Family 85. Dilleniaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.6330	Cols. dense; hc. subglobose to angulose; P-cells conoid; sp. elliptic-fusoid	*doliocarpi*	(191)
3101.4220	Cols. thin; hc. globose to piriform; P-cells cylindric; sp. oblong	*tetracericola*	(192)
3101.3220	Cols. dense; hc. globose to piriform; P-cells conic; sp. oblong	*tetracericola* var. *minor*	(193)
3101.4220	Cols. dense; hc. globose to piriform; P. nearly smooth; sp. oblong	*thwaitesii*	(194)
3101.4220	Cols. thin; hc. elongate, angulose; P. nearly smooth; sp. oblong to ellipsoid	*longipedicellata* var. *major*	(Y 5)
3101.4220	Cols. dense; hc. ovate to oblong or angulose; sp. oblong to ellipsoid	*longipedicellata*	(196)
3101.3220	Cols. thin; hc. subglobose; sp. oblong	*obscura*	(197)

Meliola

3113.4221	Cols. dense, velvety; hc. globose; ms. acute ...	*wormiae*	(198)

(191) **Asteridiella doliocarpi** Hansf., comb. nov.

= *Appendiculella doliocarpi* Hansf., Sydowia 9: 29. 1955.

Cols. epiphyllous, sometimes hypophyllous, dense, to 3 mm. diam. Hyphae substraight, branching opposite at wide angles, closely radiating-reticulate, cells mostly 25—35×7—8 μ. Ch. alternate, subantrorse, straight or bent, 22—40 μ long; stc. cylindric to cuneate, 5—18 μ long; hc. rarely subglobose and entire, usually rounded-

angulose or sublobate, 15—23×11—20 μ. Mh. separate, alternate or rarely opposite, ampulliform, 15—20×7—9 μ. P. scattered, rough, to 300 μ diam.; surface cells obtusely conoid ,or prolonged into dark brown, bent conoid processes, obtuse, smooth, or sometimes slightly rough, not striate, to 40 μ high. Sp. bent fusoid, obtuse, 4-septate, 50—61×19—22 μ, middle cell the largest.

On *Doliocarpus* sp., Panama, Stevens 233, type (FLS, F).

Though this shows something of a transition of *Appendiculella*, it seems better placed in *Asteridiella*, as the perithecial processes remain dark brown, thick-walled and do not become transversely striate.

(192) **Asteridiella tetracericola** Hansf. & Dight., nom. n.

= *Irenina tetracerae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 6. 1948, non F. Muell. & Thuem., 1878.

= *Asteridiella* tetracerae (Hansf. & Deight.) Hansf., Sydowia 10: 50. 1957.

Cols. epiphyllous, very thin, to 2 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite at wide angles, loosely reticulate. Ch. alternate, antrorse or spreading, 20—29 μ long; stc. cylindric, 7—10 μ long; hc. ovate, subglobose or widely piriform, entire or very rarely slightly angulose, 13—20×11—15 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 15—25×6—8 μ. P. scattered or in loose central group, to 160 μ diam.; surface cells of young P. with cylindric-conoid processes up to 20 μ high. Sp. oblong to subellipsoid, straight, obtuse, 4-septate, constricted, 42—48×17—20 μ.

On *Tetracera potatoria*, Sierra Leone, Deighton 1716 (type), 1878; — On *T. alnifolia*, Sierra Leone, Deighton 1212, 1816-a, with hc. more commonly angulose to sublobate, and sp. to 50×20 μ; Gold Coast, Hughes in IMI 37255; — On *Doliocarpus dentatus*, Trinidad, Baker in IMI 23462.

(193) *Asteridiella tetracericola* Hansf. & Deight., var. **minor** Hansf. comb. n.

= *Irenina tetracerae* H. & D. var. *minor* Hansf., Reinwardtia **3**: 82. 1954.

= *Asteridiella tetracerae* (H. & D.) Hansf., var. *minor* Hansf., Sydowia 10: 50. 1957.

Cols. epiphyllous, to 3 mm. diam. or confluent, dense. Hyphae crooked or undulate, branching opposite or irregular, acute, closely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, subantrorse, straight, 20—30 μ long; stc. cylindric or cuneate, 5—15 μ long; hc. globose to piriform, entire, 12—18×10—14 μ. Mh. mixed with ch., alternate or opposite, 27—35×7—9 μ, narrowly conoid to ampulliform. P. scattered, rough, to 180 μ diam.; surface cells conoid to mammillate, to 30 μ high, the apex often bent, obtuse. Sp. oblong, obtuse, straight, 4-septate, constricted, 34—40×13—15 μ.

On *Tetracera scandens*, Java, Boedijn 1246 (BO 12552, type); — On *T. indica*, Java, van Overeem 20 (BO 791), Boedijn 778 (BO).

(194) *Asteridiella thwaitesii* Berk. ex Hansf., Sydowia **10**: 50. 1957.

= *Irene thwaitesii* Berk. ex Hansf., Sydowia **9**: 7. 1955.

Cols. epiphyllous, dense, effuse and widely confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 15—30×8—10 μ. Ch. alternate, subantrorse, straight, 20—32 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. globose, ovate or slightly rounded-angulose, 13—20×12—17 μ. Mh. separate, mostly alternate, ampulliform, 20—28×8—10 μ, neck elongate. P. scattered, verrucose, to 170 μ diam., surface cells rounded, scarcely projecting. Sp. oblong, obtuse, 4-septate, constricted, 40—47×15—18 μ.

On *Acrotrema* sp., Ceylon, Thwaites s. n. (K, type).

(195) *Asteridiella longipedicellata* (Stev.) Hansf. var. *major* Hansf., Sydowia **10**: 56. 1957.

Cols. mostly epiphyllous, thin, spreading. Hyphae substraight, branching opposite or irregular, acute or wide, very loosely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, antrorse or spreading, straight or bent, 23—50 μ long; stc. cylindric, straight or bent, 10—25 μ long; hc. irregularly clavate, often bent or sinuous, mostly irregularly and shallowly rounded-lobate, 14—28×10—16 μ. Mh. not seen. P. scattered, almost smooth, to 180 μ diam., surface cells rounded. Sp. cylindric to subellipsoid, obtuse, straight, 4-septate, 40—44×16—18 μ.

On *Doliocarpus* sp., Panama, Stevens 233, type (F).

(196) *Asteridiella longipedicellata* (Stev.) Hansf., Sydowia 10: 48. 1957.

= *Irenina longipedicellata* Stev., Ann. Mycol. Berlin, **25**: 465. 1927.

Cols. hypophyllous, dense, 3—12 mm. diam. Hyphae undulate to crooked, branching opposite or irregular at wide angles, densely reticulate, cells mostly 23—35×6—8 μ. Ch. alternate or very rarely opposite (less than 1%), spreading, straight or bent, 25—55 μ long; stc. cuneate to cylindric, 9—35 μ long; hc. globose to irregularly angulose, versiform, 17—25×14—22 μ. Mh. rare, mixed with ch., conoid to ampulliform, 16—22×8—9 μ. P. scattered, verrucose, to 180 μ diam., surface cells conoid, obtuse, to 20 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 41—48×15—19 μ.

On *Dilleniaceae* indet., British Guiana, Stevens 672, type (FLS).

In the original description the spores were given by Stevens as 36×12 μ, but these must have been "foreign", as those now described above all originated recognisably correct colonies. Whether the

species type should now include var. *major* Hansf., is best left to be decided by future collections.

(197) *Asteridiella obscura* (Stev.) Hansf., Sydowia 10: 49. 1957.
= *Irenina obscura* Stev., Ann. Mycol. 25: 454. 1927.

Cols. epiphyllous, thin, to 8 mm. diam. Hyphae substraight, branching opposite, acute, loosely reticulate, cells mostly 30—45× 6—7 μ. Ch. alternate, antrorse, mostly straight, 18—24 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to ovate, entire, 14—18×11—14 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. P. scattered, rough, to 165 μ diam., surface cells obtusely conoid, to mammillate, to 20 μ high. Sp. oblong, obtuse, 4-septate, constricted, 31—37×15—16 μ.

On *Dilleniaceae* indet., Panama, Stevens 117 (type), 76 (FLS).

(198) *Meliola wormiae* Hansf., Proc. Linn. Soc. N. S. W., 78: 54. 1953.

Cols. epiphyllous, dense, to 4 mm. diam., thinly velvety. Hyphae substraight to slightly undulate, branching opposite at wide angles, very densely reticulate, subsolid, cells mostly 15—30×7 μ. Ch. opposite or alternate, subantrorse, straight, 11—17 μ long; stc. cylindric, 2—6 μ long; hc. globose, entire, 10—13 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 14—25×7—9 μ. Ms. numerous, straight, simple, acute, to 250×9—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, 40—47×15—17 μ.

On *Wormia alata*, Queensland, Bailey 484, type, in Herb. Brisbane.

Host Family 88. Pittosporaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3113.5221	Cols. dense, velvety; hyphae substraight; hc. subglobose; ms. acute	*pittospori*	(199)
3111.5322	Cols. dense, subvelvety; hyphae substraight; hc. subglobose to piriform; ms. acute	*polytricha*	(200)
3113.5322	Cols. dense, subvelvety; hyphae substraight; hc. angulose; ms. arcuate, acute	*polytricha* var. *fijiensis*	(201)
3111.5321	Cols. dense; hyphae tortuous; hc. angulose; ms. acute	*amaniensis*	(202)
3111.4221	Cols. dense, velvety; hyphae substraight; hc. subglobose, entire; ms. acute	*elmeri*	(203)

(199) *Meliola pittospori* Hansf., Sydowia 9: 22. 1955.

Cols. amphigenous, dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight, branching opposite, acute, densely reticulate, subsolid, cells mostly 15—20×7—8 μ. Ch. opposite or alternate, antrorse, straight or bent, 14—20 μ long; stc. cylindric or cuneate,

2—6 μ long; hc. globose to ovate, entire, 12—16×9—14 μ. Mh. not seen. Ms. numerous, straight, simple, acute, to 300×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, sonstricted, 47—54×17—18 μ.

On *Pittosporum senacia*, Mauritius, type in K.

(200) *Meliola polytricha* Kalchbr. & Cooke, Grevillea 8: 72. 1879.

Cols. amphigenous, mostly hypophyllous, 2—3 mm. diam., dense, velvety. Hyphae substraight, branching opposite, acute, closely radiating-reticulate, cells mostly 16—22×8—10 μ. Ch. alternate, antrorse, 20—25 μ long; stc. cuneate to cylindric, 5—8 μ long; hc. subglobose to broadly ovate, entire, 14—16×12—14 μ. Mh. separate, opposite or alternate, ampulliform, 10—18×6—8 μ. Ms. numerous, scattered, straight or slightly flexuous, to 350×8—10 μ, simple, acute. P. scattered, globose, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, 50—57×16—22 μ, rather strongly constricted.

On *Pittosporum viridiflorum*, South Africa, Wood 222, type (K, PRET), PRET 8996, 14945; — On *P. abyssinicum*, Uganda, Hansford 1987, 2083, 2289, 2111, 3011, 3188, 3385; — On *P. undulatum*, New South Wales, Fraser 231, 78, Rodway s. n.; — On *P. dasycaulon*, India, Sedgwick 1983, with hc. slightly irregular.

(201) *Meliola polytricha* K. & C. var. *fijiensis* Hansf., Sydowia **10**: 86. 1957.

Cols. amphigenous, dense, subvelvety, to 3 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite or irregular, acute, closely radiating-reticulate, with many side branches rather crooked, cells mostly 20—25×6—8 μ. Ch. alternate or opposite in varying proportions, antrorse, straight or bent, 23—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. from ovate to irregularly piriform with sinuous to sublobate margin, 14—20×11—15 μ. Mh. separate, opposite or alternate, ampulliform, 14—20×7—8 μ, rarely also ternate. Ms. numerous, scattered, straight or somewhat arcuate, but not uncinate, simple, acute, to 320×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, deeply constricted, 53—58×18—21×15—16 μ.

On *Pittosporum brockeridgei*, Fiji, Smith 4618, type (K).

(202) *Meliola amaniensis* Hansf., Proc. Linn. Soc. London **157**: 182. 1946.

Cols. amphigenous, dense, to 5 mm. diam. or confluent. Hyphae crooked, branching alternate or irregular, acute, densely reticulate, cells 20—30×6—8 μ. Ch. alternate, usually bent or sinuous, spreading, 17—30 μ long; stc. cylindric or cuneate, straight or bent, 3—15 μ long; hc. clavate to cylindric, or irregularly bent to sinuous and rounded-angulose, versiform, 12—20×8—13 μ, apex rounded or truncate. Mh. mixed with ch., few, opposite or alternate, often crowded on

hyphae with short cells, ampulliform, 12—18×7—10 μ. Ms. few to numerous, scattered, straight, simple, acute, to 300×9—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, deeply constricted, 46—57×16—22 μ.

On *Pittosporum undulatum*, Tanganyika, Grote, type; Sydow, Fung. exot. exs. 249. — On *P. pachyphyllum*, Madagascar, Viguier & Humbert 1652 (F).

This was originally determined by Sydow as *M. lanceolata-setosa*, of which the type is on Bignoniaceae.

(203) *Meliola elmeri* Syd., Leafl. Philipp. Bot. 5: 1537. 1912.

Cols. amphigenous, dense, velvety, to 3 mm. diam. Hyphae substraight to slightly undulate, branching alternate or irregular, densely reticulate, nearly solid, cells mostly 12—25×7—9 μ. Ch. alternate, straight, subantrorse, 15—21 μ long; stc. cuneate, 3—8 μ long; hc. subglobose to piriform, entire, 12—16×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—9 μ. Ms. numerous, straight, simple, acute, to 250×7—9 μ. P. in loose central group, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—50×14—17 μ.

On *Pittosporum pentandrum*, Philippines, PBS 12707 (type), 34290 (S, FLS); Sydow, Fung. exot. exs. 371.

Host Family 91. Bixaceae.

(204) *Meliola bixae* Hansf., Proc. Linn. Soc. London **165**: 172. 1955.

Cols. amphigenous, mostly hypophyllous, to 4 mm. diam. or widely confluent, subvelvety. Hyphae flexuous to crooked, cells mostly 15—40×6—7 μ, branching opposite, becoming closely reticulate. Ch. alternate or opposite in varying proportions, antrorse or spreading, straight or bent, 12—18 μ long; stc. cylindric, 3—6 μ long; hc. ovate to cylindric, entire, 10—12×6—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—28×7—9 μ, neck elongate. Ms. scattered and grouped around P., simple, obtuse, to 320×7—9 μ, upper part flexuous, widely arcuate or circinate. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, 38—44×14—17 μ.

On *Bixa orellana*, Amazon, Brazil, Baker 379, type (S); Porto Rico, Kevorkian s. n. (F, sub *M. kevorkiana* Toro, ined.)

It seems strange that while the host is very common in the American tropics, and has also been introduced into Africa and the East, the above appear to be the only records of the *Meliola* on it.

Host Family 93. Flacourtiaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2203.4230 Cols. thin to dense; hc. lobate; app. to 55 μ bent at apex ..... *natalensis* (205)

2203.4230	Cols. thin; hc. deeply lobate, larger	*natalensis* var. *ugandensis*	(206)

Irenopsis

3301.4230	Cols. subdense; hc. globose-ovate; ps. uncinate to tortuous, obtuse	*claviculata*	....(207)
3301.4220	Cols. thin; hc. subglobose, larger; ps. obtuse, uncinate	*oncobae*	(208)

Asteridiella

3103.5320	Cols. subdense; hc. subglobose	*deightonii*	(209)
3103.3220	Cols. thin; hc. subglobose	*soyauxiae*	(210)

Meliola

2113.5324	Cols. dense; hc. subglobose; ms. obtuse	*tonduzii*	(211)
2111.63×3	Cols. dense, velvety; hyphae straight; hc. crenate-lobate; ms. obtuse to subacute	*xylosmaticola*	(212)
2111.5334	Cols. dense, velvety; hyphae straight to crooked; hc. deeply lobate; ms. obtuse to subacute	*scolopiae* var. *zeylanica*	(213)
2111.5332	Cols. subdense, valvety; hyphae undulate; hc. sublobate; ms. acute	*scolopiae*	(214)
2111.5332	Cols. dense, velvety; hyphae undulate; hc. clavate-oblong, entire; ms. acute	*flacourtiacearum*	(215)
3133.4222	Cols. dense, velvety; hyphae undulate; hc. subglobose to ovate, entire; ms. with obtuse teeth, contorted at apex	*convallata*	(216)
3123.5232	Cols. dense, velvety; hyphae undulate to crooked; hc. oblong or sublobate; ms. arcuate-falcate, obtuse or acute	*saltensis*	(217)
3113.5333	Cols. dense; hyphae straight; hc. oblong, entire; ms. obtuse	*xylosmicola*	(218)
3113.4222	Cols. thin; hyphae straight to tortuous; hc. subglobose to ovate, entire; ms. obtuse	*hydnocarpi*	(219)
3111.5332	Cols. dense, crustose; hyphae straight to sinuous; hc. ovate-oblong or angulose; ms. obtuse	*bonaoensis*	(220)
3111.2221	Cols. thin; hyphae substraight; hc. oblong to ovate, entire; ms. obtuse	*xylosmae*	(221)

(205) **Appendiculella natalensis** (Doidge) Hansf., comb. n.

= *Meliola natalensis* Doidge, Trans. Roy. Soc. South Africa, 5: 724. 1917.

= *Irene natalensis* Doidge, South African Journ. Nat. Hist., 2: 40. 1920.

= *Meliola natalensis*, var. *laxa* Doidge and *conferta* Doidge, Trans. Roy. Soc. South Africa, 8: 141. 1920.

= *Meliola conferta* Doidge, l. c. 5: 724. 1917.

= *Irene natalensis* vars. *laxa* (Doidge) Stev. and *conferta* (Doidge) Stev., Ann. Mycol. 25: 422. 1927.

Cols. mostly epiphyllous, thin to dense, to 3 mm. diam. or diffuse. Hyphae straight to somewhat sinuous, cells 11—40×6—8 μ, branching opposite or irregular, loosely to densely reticulate. Ch. alternate or opposite and crowded, 14—21 μ long; stc. cuneate, often bent, 4—9 μ long; hc. usually broader than long and shallowly 2—3-lobate, 9—14×11—20 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—18×4—7 μ. P. scattered or in central group, to 250 μ diam., surface cells conic, or produced into sub-cylindric larviform appendages, to 55 μ long; tapering to recurved apex, transversely striate. Sp. bent ellipsoid, obtuse, 3-septate, rather deeply constricted, 35—49×14—10 μ.

On *Dovyalis rhamnoides*, South Africa, PRET 345, 2412, 8980, 11608, 12347, 14950, 17118, 17256, 12429; — On *D. rotundifolia*, South Africa, PRET 12363, 14222; — On *Scolopia mundtii*, South Africa, PRET 11827, 17772, 17758; — On *Flacourtiaceae* indet., South Africa, Wood 6457 (S).

(206) *Appendiculella natalensis* (Doidge) Hansf. var. *ugandensis* Hansf., Sydowia **10**: 42. 1957.

Differs from the type in looser colonies; ch. alternate, antrorse, usually straight, 20—39 μ long; stc. cylindric to cuneate, straight, 7—16 μ long; hc. very irregular, often bent and deeply 3—6-lobate, 13—23 μ long by 15—30 μ wide. Perithecia as in type. Sp. ellipsoid to fusoid, 3-septate, constricted, ends rounded but often attenuate, 40—47×14—17 μ.

On *Dovyalis macrocalyx*, Uganda, Hansford 1941 (type), 2124, 2384, 3356; — On *Oncoba spinosa*, Uganda, Hansford 2285, 2319, 2490.

(207) *Irenopsis claviculata* (Doidge) Stev., Ann. Mycol. Berlin **25**: 440. 1927.

= *Meliola claviculata* Doidge, Trans. Roy. Soc. South Africa, **8**: 113. 1920.

Cols. amphigenous, up to 0.5 mm. diam., subdense. Hyphae crooked, cells mostly 16—25×7—8 μ, branching usually opposite, acute or obtuse, closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 16—24 μ long; stc. cuneate to cylindric, straight or antrorse-bent, 4—11 μ long; hc. globose to ovate and entire, less commonly slightly rounded-angulose or the apex truncate, 11—15×9—12 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 15—20×6—9 μ. P. single or in close central group, to 210 μ diam., each with 1—7 erect-spreading ps., to 110×6—7 μ, obtuse, uncinate to tortuous or irregularly coiled and slightly asperate at apex. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—41×15—19 μ.

On *Oncoba* sp., Portuguese East Africa, Pole Evans in PRET 7388, type. — On *Xylotheca kirkii*, Tanganyika, Busse 2983 (BM).

(208) **Irenopsis oncobae** (P. Henn.) Hansf., comb. n.
= *Dimerosporium oncobae* P. Henn., Engl. Bot. Jahrb. **23**: 237.
= *Meliola oncobae* (P. Henn.) Theiss., Bot. Centralbl. Abt. II, **29**: 55. 1912.
= *Irenopsis caloncobae* Hansf., Proc. Linn. Soc. London, **157**: 167. 1945.

Cols. amphigenous, thin, to 7 mm. diam., smooth. Hyphae sinuous, branching irregular at wide angles, loosely interwoven-reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, antrorse or spreading, straight or bent, 20—30 μ long; stc. cuneate to cylindric, 5—15 μ long; hc. subglobose, entire, 15—20×14—18 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—22×14—18 μ. P. scattered, verrucose, to 180 μ diam.; ps. 5—10, erect-spreading, to 120×7—8 μ, obtuse and uncinate at apex, coarsely dark-asperate, thick-walled (2 μ), apparently continous, translucent brown. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×15—17 μ.

On *Oncoba* sp., Cameroons, Zenker, type (F, ex Theissen, ex Berlin); — On *Caloncoba welwitschii*, Congo Belge, Hendrickx 858 (type of *I. caloncobae*).

(209) *Asteridiella deightonii* Hansf., Sydowia **10**: 47. 1957.
= Irenina deightonii Hansf., Mycol. Paper, IMI 23: 7. 1948.

Cols. amphigenous, subdense, to 2 mm. diam. Hyphae substraight to sinuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—20×7—8 μ. Ch. alternate or opposite, straight or antrorse-bent, 16—24 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. clavate to subglobose, entire, 10—16×8—12 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, to 25×7—9 μ, neck elongate. P. scattered, to 190 μ diam., surface cells obtuse conoid to sub-mammillate, to 20 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 46—52×18—21 μ

On *Caloncoba echinata*, Sierra Leone, Deighton 2042, type.

(210) *Asteridiella soyauxiae* Deighton, Sydowia **11**: 93. 1957.

Cols. hypophyllous, to 1 mm. diam. or confluent, thin. Hyphae substraight to sinuous, branching opposite at wide angles, loosely interwoven-reticulate, cells mostly 15—25×5—6 μ. Ch. opposite or alternate, straight or slightly bent, 11—16 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to ovate, entire, 9—13×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ, neck elongate. P. loosely scattered, rough, to 160 μ diam., surface cells bent conoid, projecting to 28 μ. Sp. cylindric, obtuse, 4-septate, slightly constricted, 33—37×12—14 μ.

On *Soyauxia floribunda*, Sierra Leone, Deighton 4974, type.

(211) *Meliola tonduzii* Speg., Bol. Acad. Cienc. Cordoba **23**: 190. 1919.

Cols. amphigenous, 3—5 mm. diam. or confluent, dense. Hyphae

substraight, branching opposite at wide angles, densely reticulate and becoming nearly solid, cells mostly 15—20×7—8 μ. Ch. opposite or alternate in varying proportions, spreading or subantrorse, straight or bent, mostly 18—25 μ long; stc. cylindric or cuneate, 3—14 μ long; hc. subglobose, ovate or piriform, entire, 12—19×10—14 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, 18—25×8—10 μ. Ms. scattered, fairly numerous, straight, simple, obtuse, to 450 μ (Stevens, to 1500 μ), 10—12 μ thick. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid to subfusoid, obtuse, 3-septate, constricted, 45—55×19—22 μ, often slightly bent.

On *Xylosma salzmannii*, Costa Rica, Tonduz in SPEG 609, type.

(212) *Meliola xylosmaticola* Hansf., Sydowia 9: 50. 1955.

Cols. amphigenous, dense, velvety, to 3 mm. diam. or confluent. Hyphae straight, branching opposite or irregular at wide angles, loosely reticulate at first, then becoming dense, cells mostly 25—30×8—9 μ. Ch. alternate, straight, antrorse-spreading, 25—40 μ long; stc. cuneate to cylindric, 5—15 μ long; hc. irregularly crenate-lobate, 20—25×14—20 μ. Mh. mixed with ch., few, alternate or unilateral, ampulliform, 25—30×8—9 μ. Ms. numerous, scattered, straight, simple, obtuse to subacute, to 900×11—12 μ. P. scattered, verrucose, immature. Sp. cylindric, straight or slightly bent, 3-septate, obtuse, 63—77×16—18 μ.

On *Xylosma buxifolium*, San Domingo, Ciferri, Mycofl. doming. exs. 189 (K, type); Ciferri 2767 (S).

(213) *Meliola scolopiae* Doidge var. *zeylanica* Hansf., Proc. Linn. Soc. London 158: 35. 1946.

Cols. amphigenous, dense, velvety, to 3 mm. diam. Hyphae substraight to crooked, branching mostly alternate, rarely opposite, acute, very densely reticulate, almost solid, cells mostly 15—20×7—9 μ. Ch. alternate, straight or bent, 20—35 μ long; stc. cylindric, 6—12 μ long; hc. deeply 3—6-stellate-lobate, straight or very irregularly bent, 15—25×15—25 μ. Mh. few, mixed with ch., conoid to ampulliform, alternate or unilateral, 20—26×7—9 μ. Ms. numerous, scattered, straight or slightly flexuous, simple, obtuse to subacute, to 1100×9—11 μ. P. scattered, verrucose, to 240 μ diam. Sp. bent ellipsoid, obtuse, 3-septate, constricted, 53—59×18—22 μ.

On *Scolopia crassipes*, Ceylon, Herb. Peradeniya 5208, type; — On *S. brownii*, New South Wales, Fraser 105, 203 p. p., with sp. 53—69×18—20 μ.

(214) *Meliola scolopiae* Doidge, Bothalia 2: 437. 1928.

Cols. amphigenous, velvety, subdense, to 5 mm. diam. or confluent. Hyphae substraight to slightly sinuous, branching opposite or alternate at wide angles, loosely to rather closely reticulate, cells 20—40×6—7 μ. Ch. alternate, straight or bent, 23—37 μ long; stc. cuneate to cylindric, 6—13 μ long; hc. irregularly clavate, often bent.

sublobate, 15—21 × 9—14 μ. Mh. mixed with ch., opposite or alternate, slender ampulliform, 20—35 × 6—8 μ, neck elongate. Ms. numerous, scattered, simple, straight, acute, to 400 × 7—10 μ. P. scattered or in groups, to 300 μ diam., surface cells convex to mammillate. Sp. bent ellipsoid to subfusoid, obtuse, 3-septate, 49—57 × 16—21 μ, end cells smaller.

On *Scolopia zeyheri*, South Africa, PRET 14959, 12277, 9067, 22421; — On *Aberia macrocalyx*, Uganda, Hansford 1370, 1389; — On *Flacourtia* sp., Uganda, Hansford 1463

(215) *Meliola flacourtiacearum* Hansf., Proc. Linn. Soc. London, **159**: 24. 1945.

Cols. epiphyllous, to 3 mm. diam., dense, velvety, subcrustose. Hyphae substraight to slightly flexuous, branching opposite, subrectangular, densely reticulate, almost solid, cells mostly 15—20 × 8—10 μ. Ch. alternate, spreading, straight or slightly bent, 21—35 μ long; hc. clavate to cylindric, straight or bent, entire, 13—22 × 10—15 μ, rarely slightly angulose. Mh. few, mixed with ch., alternate, ampulliform, 20—28 × 7—9 μ, neck elongate. Ms. very numerous, straight, simple, acute, to 400 × 10—12 μ. P. closely scattered, verrucose, to 250 μ diam. Sp. cylindric to subfusoid, slightly bent, 3-septate, ends rounded, 48—56 × 16—20 μ, slightly constricted.

On *Scolopia rhamniphylla*, Congo Belge, Hendrickx 2731; Uganda, Snowden s. n.; — On *Xylosma ellipticum*, Costa Rica, Standley 42092 (SPEG); — On *Flacourtiaceae* indet., Congo Belge, Hendrickx 3450, 3473, 3435, 3465.

(216) *Meliola convallata* Petr. Ann. Mycol. **35**: 34. 1937.

Cols. mostly hypophyllous, dense, velvety, to 2 mm. diam. or confluent. Hyphae substraight to sinuous, branching opposite at wide angles, densely reticulate, almost solid in centre, cells mostly 15—20 × 7—9 μ. Ch. alternate or opposite, subantrorse, straight, 15—19 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose to wide ovate, entire, 10—12 × 8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—20 × 7—9 μ. Ms. very numerous, to 350 × 12—15 μ, the upper part irregularly bent or contorted, dentate to 15 μ, teeth obtuse. P. in central group, verrucose, to 300 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—45 × 16—18 μ.

On *Hasseltia floribunda*, Costa Rica, Brenes 402, type.

(217) **Meliola saltensis** Hansf., nom. n.

= *Meliola falcatiseta* Speg. var. *alternipes* Speg., Anal. Mus. Nac. Buenos Aires **32**: 374. 1924.

Cols. epiphyllous, dense, velvety, easily secedent, to 1 mm. diam. Hyphae substraight to crooked, branching alternate or irregular at acute, angles, densely reticulate and almost solid in places, cells mostly 15—22 × 6—8 μ. Ch. alternate or to about 5% opposite, spreading or antrorse-bent, 18—27 μ long; stc. cylindric to cuneate,

5—14 μ long; hc. oblong, clavate or irregular, angulose to sublobate, often bent, 12—20×9—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×7—9 μ. Ms. numerous, scattered, arcuate to falcate above, simple, obtuse to acute, to 450×13—15 μ, opaque black. P. scattered or loosely aggregate, verrucose, to 240 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 46—53× 16—17 μ.

On *Xylosma* sp., Argentina, SPEG 619, type.

(218) *Meliola xylosmicola* Orejuela, Mycologia **36**: 438. 1944.

Cols. epiphyllous, dense, 2—3 mm. diam., easily secedent. Hyphae straight, branching opposite, acute, closely reticulate, cells mostly 20—30×8—10 μ. Ch. alternate or to 5% opposite, to 22 μ long, subantrorse; stc. cuneate, 4μ long; hc. cylindric to subclavate, straight or slightly bent, entire, 13—18×9—11 μ. Mh. few, mixed with ch., opposite, ampulliform, 15—24×9—10 μ. Ms. scattered and grouped around P., simple, straight, to 570×10 μ, tapering to obtuse apex. P. scattered, slightly verrucose, to 215 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 47—59×22—24 μ.

On *Xylosma spiculiferum*, Colombia, Chardon 1076, type (CUP); — On *Laetia thamnia*, Jamaica, Baker in IMI 34206.

(219) Meliola hydnocarpi Hansf., Sydowia **10**: 76. 1957.

Cols. amphigenous, thin, to 4 mm. diam. Hyphae on upper surface substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 20—30×6—7 μ; on lower surface hyphae finely sinuous to tortuous. Ch. alternate or to 2% opposite, straight or slightly bent, antrorse or spreading, 13—17 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to ovate, often slightly bent, entire, 10—13×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—28×6—8μ, neck elongate. Ms. mostly grouped around P., straight or slightly flexuous, simple, obtuse, to 480×8—9 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, constricted, 36—41×15—16 μ.

On *Hydnocarpus hutchinsonii*, British North Borneo, Elmer 20717, type (BO).

(220) *Meliola bonaoensis* Cif., Mycopathologia **7**: 102. 1954.

Cols. crustose to subcrustose, scattered, rarely confluent, mostly epiphyllous, to 3 mm. diam. Hyphae straight or sinuous to subgeniculate, branching opposite or irregular at acute angles, closely reticulate, 9—12 μ thick. Ch. alternate; hc. ellipsoid to spathulate, ovoid or subcylindric, entire or subangulose, 16—21×14—17 μ, straight or slightly bent; stc. 10—16 μ long. Mh. few, mixedwith ch., opposite or alternate, ampulliform, 20—28×9—12 μ, neck elongate. Ms. few, mostly around P., flexuous to straight, to 450×12—15 μ, obtuse, simple. P. verrucose, to 240 μ diam. Sp. ellipsoid tooblong, obtuse, 4-septate, constricted, 46—54×21—27 μ.

On *Lunania* sp., San Domingo, Ekman 4257, type (not seen by present writer).

(221) *Meliola xylosmae* Stev., Ann. Mycol. 26: 256. 1928.

Cols. thin, epiphyllous, to 9 mm. diam. Hyphae substraight to slightly undulate, branching opposite at wide angles, loosely interwoven-reticulate, cells mostly 20—30×4.5—6 μ. Ch. alternate. antrorse or spreading, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. oblong to ovate, entire, 11—15× 5—8 μ. Mh. separate, opposite or alternate, ampulliform, 15—19× 6—7 μ. Ms. scattered and grouped around P., substraight or somewhat flexuous, simple, obtuse, to 230×6—7 μ. P. scattered, verrucose to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 24—30×11—12 μ.

On *Myroxylon intermedium*, Panama, Stevens 1103, type (FLS).

Host Family 94. Samydaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

doubtful species ..... *casearíae* (222)

Irenopsis

$3^3/_4$01.4330 Cols. thin; hyphae crooked; hc. oblong to sublobate; ps. obtuse, bent to tortuous ..... *casearina* (223)

Asteridiella

2101.4230 Cols. thin; hyphae straight; hc. lobate ..... *casearíae* (224)

3101.4230 Cols. subdense; hyphae substraight; hc. entire to sublobate ..... *homalii-angustifolii* (225)

Meliola

31⅓3.5233 Cols. thin, subvelvety; hyphae undulate; hc. ovate-clavate, entire; ms. obtuse to acute ... *casearíae* (226)

3123.4232 Cols. subdense, velvety; hyphae flexuous; hc. cylindric to subconoid, entire; ms. arcuate to bent, obtuse ..... *homaliicola* (226a)

3121.6332 Cols. thin, velvety; hyphae substraight; hc. oblong, entire or sublobate; ms. obtuse ..... *homalii* (227)

3113.5222 Cols. dense, velvety; hyphae straight to flexuous; hc. oblong, entire; ms. acute ..... *casearíicola* (228)

3113.4224 Cols. subdense, velvety; hyphae substraight; hc. subglobose to oblong, entire; ms. acute, biform ..... *zig-zag* (229)

3113.3221 Cols. thin; hyphae undulate; hc. subglobose to piriform, entire; ms. obtuse ..... *casearíae-arboreae* var. *jamaicensis* (229a)

311⅓.4223 Cols. thin; hyphae substraight; hc. subglobose, entire; ms. acute ..... *casearíae-guianensis* (230)

3111.6334	Cols. thin; hyphae substraight; hc. oblong to sublobate; ms. obtuse	*homalii-dolichophylli*	(231)
3111.6332	Cols. dense, velvety; hyphae substraight; hc. oblong to sublobate, ms. acute	*batangasensis*	(232)
3111.4222	Cols. dense, velvety; hyphae crooked; hc. ovate, entire; ms. acute	*samydae*	(233)
3111.4222	Cols. thin, effuse; hyphae sinuous; hc. subglobose, entire; ms. obtuse	*banarae*	(234)
3111.4222	as above; ms. obtuse to acute	*banarae* var. *aculeatae*	(235)
3111.3221	Cols. thin; hyphae crooked; hc. ovate to *angulose*; ms. obtuse	*casearíae-arboreae*	(236)
3111.4223	Cols. thin; hyphae crooked; hc. ovate, entire; ms. obtuse	*casearíae-arboreae* var. *guatemalensis*	(237)
(?) 3112.3231	Cols. thin; hyphae crooked; hc. ovate, entire; ms. ?	*melanochaeta*	(238)
3111.3221	Cols. thin; hyphae substraight; hc. ovate, entire; ms. obtuse to clavulate	*kernii*	(239)
(?) 31⅓1.4221	Cols. dense, velvety; hyphae straight; hc. ovoid, entire; ms. obtuse, clavulate or „sub-dentate"	*hypodoria*	(240)

(222) *Amazonia casearíae* Viegas, Bragantia **4**: 33. 1944.

Cols. epiphyllous, easily secedent, 3—7 mm. diam. Hyphae superficial, dark fuscous, radiating, 6 μ wide; in centre of colony with serpentine branches producing each a single terminal conidium. Conidia curved fusiform, 3-septate, fuscous, the central cells darker, 36—45×10—12 μ. Hyphododia conical or rarely cylindric, continuous, entire, 8—10×7—8 μ. Thyriothecia inverse, scutiform, radiate. Spores 4—5-septate, dark fuscous, smooth, constricted, 50—60×12—18 μ.

On *Casearia sylvestris*, Brazil, Krug, Sept. 1939.

No specimens have been available to the present author, but from the above description it seems certain that the mycelium and conidia belong to either *Schiffnerula* or *Clypeolella*, while the ascospores probably belong to some other associated fungus, possibly of *Chaetothyriaceae*. There is no evidence that this "species" has any affinity with the *Meliolineae*.

(223) *Irenopsis casearina* Hansf., Sydowia Beih. **1**: 93. 1957.

Cols. hypophyllous, to 3 mm. diam., thin and scarcely visible save for the scattered perithecia, appearing on upper surface as a faint brownish spot. Hyphae crooked, penetrating between and beneath the stellate leaf hairs, branching opposite or irregular, closely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, more or less antrorse, variously bent, 16—25 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. oblong or irregular, often bent to sinuous, rounded-

angulose to sublobate, 12—17×8—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—17×7—9 μ. P. loosely scattered, verrucose, to 210 μ diam.; ps. 4—8, erect-spreading, straight below, dark brown, simple, continuous, to 150×8—9 μ, wall 1.5—2 μ thick, the apex bent to contorted, obtuse, the surface with a few scattered dark granules. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—50×20—24×13—14 μ.

On *Casearia arborea*, Porto Rico, Stevens 5709 (FLS).

(224) *Asteridiella casearíae* Hansf., Sydowia **10**: 47. 1957.

= *Irenina casearíae* Hansf., Proc. Linn. Soc. London **156**: 104. 1944.

= *Meliola duplicata* Cif., Mycopathologia 7: 88. 1954.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae straight, branching irregular, acute, loosely reticulate, cells 25—35×6—7 μ. Ch. alternate, 23—30 μ long, straight, more or less antrorse; stc. cuneate, 6—12 μ long; hc. subglobose, shallowly 2—3-lobate, 14—19×15—18 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 18—22×7—8 μ. P. scattered, verrucose, to 240 μ diam.; surface cells mammillate, to 20 μ high. Sp. oblong, obtuse, usually slightly bent, 3-septate, constricted, 42—49×16—18 μ.

On *Casearia engleri*, Uganda, Hansford 3181, type.

(225) *Asteridiella homalii-angustifolii* (Deight.) Hansf., Sydowia **10**: 48. 1957.

= *Irenina homalii-angustifolii* Deight., Sydowia **5**: 1. 1951.

Cols. mostly epiphyllous, subdense, to 3 mm. diam. Hyphae straight or slightly undulate, cells mostly 20—40×6—8 μ, branching opposite, acute, closely reticulate. Ch. alternate, spreading, straight or bent, 20—27 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. ovate to clavate, entire or irregularly sublobate, often bent, 15—19×9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—20×6—9 μ. P. scattered, to 220 μ diam., surface cells obtusely conoid to 30 μ high. Sp. ellipsoid, obtuse, 4-septate, 41—47×17—21×12 μ.

On *Homalium angustifolium*, Sierra Leone, Deighton 2391, type.

(226) *Meliola casearíae* Petr. & Cif., Ann. Mycol. 28: 386. 1930.

Cols. amphigenous, thin, to 6 mm. diam., thinly velvety. Hyphae sinuous to undulate, cells 15—30×7—9 μ, branching opposite, acute, loosely reticulate. Ch. alternate or about 10% opposite, straight or bent, 17—25 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. ovate to cylindric-clavate, often slightly retrorse-bent, entire, 15—19×10—12 μ. Mh. mixed with ch., alternate, ampulliform, 22—31×6—9 μ, neck elongate. Ms. thinly scattered, straight, simple, obtuse or acute, to 850×9—12 μ, sometimes shortly 2-dentate. P. scattered, verrucose, to 230 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 46—55×18—22×15 μ.

On *Cascaria sylvestris*, San Domingo, Ciferri 2267 (S); Porto Rico, Stevens 7285, 3920, 1200, 7017, 7566, 5837, 1051, 9136, 5864; — On *C.* sp., Brazil, Rick in Theissen, Decad. fung. brasil. 292 p. p.; Porto Rico, Stevens 7074; — On *C. ramiflora*, Porto Rico, Stevens 9306, p. p.

(226-a) *Meliola homaliicola* Deight., Sydowia **11**: 107. 1957.

Cols. amphigenous, mostly hypophyllous, subdense, velvety, to 12 mm. diam. Hyphae substraight to flexuous, branching opposite or alternate, acute to wide, closely reticulate-interwoven, cells mostly 20—30×6—9 μ. Ch. opposite or alternate, straight or slightly bent, spreading, 13—24 μ long; stc. cylindric, 3—6 μ long; hc. cylindric to subconoid, straight or slightly bent, entire, 13—20×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—30×7—10 μ. Ms. scattered, strongly arcuate to bent, simple, obtuse, to 380×8—10 μ, gradually attenuate to 2—3 μ at rounded apex. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—48×17—19×14—15 μ.

On *Homalium letestui* (*H. dolichophylli*), Sierra Leone, Deighton 5272 (IMI 53131, type).

(227) *Meliola homalii* Hansf., Recueil I. N. E. A. C., 2: 39. 1945.

Cols. hypophyllous, velvety, thin, to 6 mm. diam. Hyphae straight to sinuous, cells mostly 25—40×8—11 μ, branching opposite or irregular, becoming densely reticulate in centre. Ch. alternate, usually bent, 25—34 μ long; stc. cylindric, straight or bent, 6—10 μ long; hc. cylindric, often bent, rounded at apex, sometimes sublobate 20—24×10—12 μ. Mh. mixed with ch., mostly alternate, ampulliform, 22—27×9—11 μ. Ms. numerous, variously bent to arcuate and reflexed, simple, attenuate to obtuse apex, to 340×9—12 μ. P. closely scattered, verrucose, to 220 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 57—65×21—25 μ, middle cell distinctly the largest.

On *Homalium lalaense*, Congo Belge, Hendrickx 2342, type.

(228) *Meliola casearíicola* Hansf., Proc. Linn. Soc. London **159**: 24. 1947.

Cols. amphigenous, dense, velvety, to 5 mm. diam. Hyphae substraight or on lower surface flexuous and irregular, cells mostly 15—20×8—9 μ, closely reticulate, branching opposite at wide angles. Ch. alternate or opposite, straight or bent, 17—25 μ long; stc. cylindric, 4—10 μ long; hc. cylindric-clavate, sometimes subglobose, entire or rarely rounded-angulose, 10—17×9—13 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 15—22×8—10 μ. Ms. numerous, straight, simple, acute, to 400×9—11 μ, scattered thickly over mycelium, and grouped around P., in some specimens to 600 μ long. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—52×17—22 μ, the middle cell sometimes the largest.

On *Cascaria engleri*, Uganda, Hansford 3724 p. p., type; — On *C. sylvestris*, Brazil, Theissen, decad. fung. brasil 58; Rick s. n. (S); Theissen 292; in these mixed with *M. casseariae*; — On *C. guianensis*, Venezuela, Chardon & Stelling 808 (CUP); — On *C.* sp., Brazil, Usteri 13 (S).

(229) *Meliola zig-zag* Berk. & Curt., Journ. Linn. Soc. London, **10**: 392. 1869.

= *Meliola trichocarpa* Cif., Ann. Mycol. **36**: 225. 1938.

Cols. mostly epiphyllous (in type hypophyllous), up to 8 mm. diam., velvety, more or less dense. Hyphae substraight, branching opposite, acute to wide, closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or to about 10% opposite, more or less antrorse, straight or bent, 15—20 μ long; stc. cuneate to cylindric, 2—6 μ long; hc. subglobose, ovate or oblong, entire, 11—16×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. numerous, biform: (a) closely scattered on mycelium, straight, simple, acute, to 1000×10—11 μ (in most specimens only to 500 μ long). (b) grouped around P., straight, simple acute, to 250×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—46×16—19×13—14 μ.

On *Cascaria sylvestris*, Cuba, Wright 882 (K, F), type; Porto Rico, Fink 457 (F); — On *C. ilicifolia*, San Domingo, Ciferrri, Mycofl. doming. exs. 202, (type of *M. trichocarpa*); — On *C. guianensis*, Venezuela, Kern & Toro 1732 (CUP); Porto Rico, Whetzel 2543, 2567; — On *C. ramiflora*, Porto Rico, Stevens 9306 p. p., 5865, 512, 7745, 9256, 6683, 9328, 4262; — On *C. arborea*, Porto Rico, Whetzel 3307, Stevens 6071, 5709; — On *C. aculeata*, Porto Rico, Stevens 7151; — On *C.* sp., Jamaica, Martyn in IMI 35765.

The author is indebted to Dr. Schultes of the Farlow Herbarium for the determination of the host plant of the type collection, originally given as "*Lauraceae*".

(229-a) *Meliola casseariae-arboreae* Hansf. var. jamaicensis Hansf., Sydowia **11**: 54. 1957.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae undulate, branching opposite or irregular, acute, loosely radiating-reticulate, cells mostly 20—35×6—8 μ. Ch. alternate or to 10% opposite, subantrorse, straight or slightly bent, 14—20 μ long; stc. cuneate, 3—6 μ long; hc. subglobose to piriform, entire, 11—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. few, grouped around P., substraight, simple, obtuse, to 260×7 μ. P. in loose central group, verrucose, to 195 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—39×15—17 μ.

On *Cascaria guianensis*, Jamaica, Thaxter 7256, type (F).

(230) *Meliola casearíae-guianensis* Hansf., Sydowia **9**: 11. 1955.
= *Meliola* ambigua Pat. & Gaill. var. *casearíaecola* Cif., Mycopathologia **7**: 93. 1954.

Cols. epiphyllous, thin, 1—3 mm. diam., sometimes confluent. Hyphae substraight or slightly undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate or about 1% opposite, straight or bent, antrorse, 18—25 μ long; stc. cuneate, 4—9 μ long; hc. clavate to subglobose, entire, straight or slightly bent, 12—16×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×7—9 μ. Ms. thinly scattered and grouped around P., straight, simple, acute or subacute, 360—560×8—9 μ. P. loosely aggregate in centre of colony, slightly verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×15—18 μ.

On *Casearia guianensis*, San Domingo, Ciferri 2776 (type) (S); — On *C. ramiflora*, Porto Rico, Stevens 7688, 5844 (FLS).

(231) *Meliola homalii-dolichophylli* Hansf. & Deight., Mycol. Paper, IMI **23**: 7. 1948.

Cols. hypophyllous, rarely also epiphyllous, thin, to 14 mm. diam. or confluent. Hyphae substraight to undulate, cells 20—40×8—12 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate, usually bent, 24—38 μ long; stc. cylindric to cuneate, 8—14 μ long; hc. oblong to cylindric, ovoid, clavate or sublobate, variously curved, 16—26×12—16 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 25—34×8—9 μ, neck long, torqueate. Ms. biform: around P., incurved above to subflexuous, simple, acute, to 420×10 μ; on mycelium, scattered, straight, simple, obtuse, to 1310×10—12 μ. P. scattered, verrucose, to 255 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 58—73×24—28 μ, the middle cell somewhat the largest.

On *Homalium dolichophyllum*, Sierra Leone, Deighton 1332, type; 1616, 1808, 2010.

(232) *Meliola batangasensis* Hansf. Sydowia Beih. **1**: 100. 1957.

Cols. hypophyllous, to 4 mm. diam. or confluent, dense, velvety. Hyphae substraight to undulate, branching opposite or irregular, acute, densely reticulate and becoming nearly solid, cells mostly 15—25×7—9 μ. Ch. alternate, more or less antrorse, straight or bent, 18—30 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. oblong to piriform, or irregularly rounded-angulose to sublobate above, 12—20×10—17 μ. Mh. few, mixed with ch., alternate, ampulliform, 21—29×8—10 μ. Ms. numerous, scattered, erect, straight, simple acute, to 450×11—14 μ. P. scattered, globose, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 52—64×21—25×16—19 μ.

On *Homalium barandanae*, Philippines, PBS 22682, type (FLS); — On *H. villarianum*, Philippines, PBS 22681 (FLS).

(233) *Meliola samydae* Cif., Ann. Mycol. **29**: 285. 1931.

Cols. epiphyllous, to 3 mm. diam., dense, velvety. Hyphae crooked, cells 20—35 × 5—7 μ, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate, antrorse or spreading, straight, 16—20 μ long; stc. 3—6 μ long, cylindric or cuneate; hc. ovate to subglobose, entire, 11—15 × 7—10 μ. Mh. few, mixed with ch., 16—23 × 5—7 μ, neck elongate. Ms. few, mostly round P., straight, simple, acute, to 360 × 6—8 μ. P. scattered, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, 36—42 × 12—16 μ, slightly constricted.

On *Samyda pubescens*, San Domingo, Ciferri, Mycofl. doming. exs. 47, type.

(234) *Meliola banarae* Stev., Ann. Mycol. **26**: 249. 1928.

Cols. epiphyllous, effuse, thin. Hyphae sinuous, branching opposite at wide angles, loosely reticulate, cells mostly 20—33 × 6—8 μ. Ch. alternate, straight or bent, subantrorse, 20—25 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to piriform, entire, 13—18 × 10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22 × 8—10 μ. Ms. mostly around P., straight below, simple, variously bent near obtuse apex but not uncinate, to 500 × 7—9 μ. P. scattered, nearly smooth, to 185 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—47 × 17—18 μ.

On *Banara guianensis*, Panama, Stevens 1017, 1189 (F, FLS); Venezuela, Kern & Toro 1761 (CUP).

(235) Ciferri, Mycopathologia **7**: 99, 1954, described a new variety, *aculeatae* of the above species, on *Casearia aculeata*, San Domingo, Ekman 3124, 3313; differing from the type in having the setae 350—400 × 7—8.5 μ, usually obtuse, rarely acuminate, and with the perithecia only to 130 μ diam. Specimens of this variety have not been available to the present author, who is unable to state whether it should stand as distinct, or whether it is referable to some other species.

(236) *Meliola casseariae-arboreae* Hansf., Sydowia **10**: 67. 1957.

Cols. hypophyllous, to 5 mm. diam., thin, with only the perithecia and setae showing above the leaf tomentum. Hyphae crooked, branching opposite or irregular at varying angles, loosely interwoven-reticulate, cells mostly 20—40 × 5—6 μ. Ch. alternate, antrorse or spreading, straight or usually bent, 15—25 μ long; stc. cylindric, 3—6 μ long; hc. ovate, clavate or slightly rounded-angulose, often bent, 11—18 × 6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 6—7 μ. Ms. thinly scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 280 × 6—7 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—37 × 15—17 × 12—13 μ.

On *Casearia arborea*, Porto Rico, Whetzel et al. 3307, type (CUP); Stevens 3935 (FLS).

(237) *Meliola casearíae-arboreae* Hansf. var. *guatemalensis* Hansf., Sydowia Beih. **1**: 103. 1957.

Cols. amphigenous, mostly hypophyllous, to 3 mm. diam. or widely confluent, thin. Hyphae crooked to undulate, branching opposite at acute to wide angles, loosely interwoven-reticulate, the cells mostly 20—25×5—6 μ. Ch. alternate or very rarely opposite (less than 1%), straight or variously bent, 14—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovate to oblong, entire, often bent, 10—13×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—27×7—8 μ, neck elongate. Ms. scattered thinly and grouped around P., straight, simple, obtuse, to 530×8—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—43×15—17 μ.

On *Casearia* sp., Guatemala, Standley 64124, type (F); Honduras, Standley 55193 (F).

(238) *Meliola melanochaeta* Cif., Mycopathologia **7**: 155. 1954.

Cols. subvelvety, 3—8 mm. diam., thin. Hyphae crooked, 3.5—5.5 μ thick, branching at wide angles, loosely reticulate. Ch. opposite, stc. 2—4 μ long, hc. elliptic, to ovate, entire, 14—16—(22)×12—14 μ. Mh. few, ampulliform. Ms. numerous, straight or slightly bent, to 250×4—7 μ. P. verrucose, to 140 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 32—34×13—15 μ.

On *Casearia arborea*, San Domingo, Ekman 3215.

Specimens of this species have not become available to the present writer, who suspects that it is the same as *M. casearíae-arboreae*. In the original description Ciferri mentions perithecial setae, resembling those on the mycelium; these are probably mycelial in origin, grouped around the perithecia. The specific epithet is illegitimate, being antedated by Sydow, 1928.

(239) **Meliola kernii** Hansf., sp. n.

Cols. epiphyllous, thin, to 2 mm. diam. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate, cells mostly 15—22×5—6 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 12—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to ovate, entire, 9—11×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. thinly scattered, mostly grouped around P., straight or slightly flexuous, obtuse or slightly clavulate, to 250×6—7 μ, apex up to 8 μ thick. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—31×12—14 μ.

On *Casearia guianensis*, Venezuela, Kern & Toro 1772 (CUP), mixed with *M. trichocarpa*.

Ex descr. this resembles *M. hypodoria* Cif., save that the latter is described as having much larger spores.

(240) *Meliola hypodoria* Cif., Mycopathologia **7**:138. 1954.

Cols. hypophyllous, causing leafspots visible on upper surface as reddish to purplish-brown areas; carbonaceous "to velvety", 1—3 mm. diam. or subconfluent, dense. Hyphae straight, branching opposite at acute to wide angles, closely reticulate, 6—8 μ thick. Ch. opposite or alternate, spreading, straight, 16—20 μ long; stc. cylindric, 3—7 μ long; hc. oblong to ovoid, entire, 10—15×6—8 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 12—15×6—8 μ. Setae ("vermiform perithecial appendages") 3—6 on (or round ?) each perithecium, flexuoux, simple, obtuse to clavulate or sometimes "sub-dentate", 145—175×9—11 μ. P. scattered or aggregate, rough, to 160 μ diam. Sp. oblong, obtuse, "not constricted", 4-septate, 39—42×14—16 μ.

On *Casearia bicolor*, San Domingo, Ekman 4211, type.

Specimens of this species have not been available to the present writer, and Ciferri's description is not sufficiently accurate to assign a definite Beeli formula to it. The "vermiform perithecial appendages" described by him seem to me to be either true perithecial setae, in which case the species belongs to *Irenopsis*, or to be merely short mycelial setae grouped around the base of the perithecium.

Host Family 95. Canellaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

31¾1.5321	Cols. dense, velvety; hyphae straight; hc. ovoid, entire; ms. dentate-furcate ..... *cinnamodendri*	(241)
3113.4234	Cols. dense, velvety; hyphae undulate; hc. oblong to cylindric, entire; ms. acute ..... *canellae*	(242)

(241) *Meliola cinnamodendri* Stevenson, Mycologia **35**: 630. 1943.

Cols. dense, epiphyllous, velvety, to 4 mm. diam. or widely confluent. Hyphae substraight, branching opposite, acute to wide, closely reticulate, cells mostly 20—30×7—9 μ. Ch. alternate or rarely opposite (less than 1%), antrorse or spreading, straight or bent, 18—28 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. ovoid to oblong, entire, straight or curved, 12—18×10—12 μ. Mh. separate or sometimes mixed with ch., opposite or alternate, ampulliform, 15—22×7—9 μ. Ms. numerous, scattered and grouped around P., straight or slightly bent, to 275×7—10 μ, apex 2—6-dentate to 30 μ, or shortly 2-furcate with dentate br. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55×19—21 μ.

On *Cinnamodendron axillare*, Brazil, Muller 622, type (USDA).

(242) *Meliola canellae* Cif., Ann. Mycol. **31**: 155. 1933.

Cols. epiphyllous, velvety, to 3 mm. diam. or confluent, rarely also hypophyllous. Hyphae substraight to sinuous, cells mostly

15—25×7—8 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. opposite or up to 20% alternate, subantrorse or recurved, 17—23 μ long; stc. cylindric, 2—7 μ long; hc. cylindric with broadly rounded apex, straight or slightly bent, 11—18×7—10 μ, entire. Mh. mixed with ch., few or fairly numerous, opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 1000×8—11 μ. P. scattered, verrucose, to 250 μ diam. Sp. cylindric, obtuse, 4-septate. 36—44×15—18 μ.

On *Canella alba*, San Domingo, Ciferri, Mycofl. doming. exs. 144, type; — On *Winterana* sp. (= *Canella*), Porto Rico, Stevens 9189, 8548, 6154, 5125, 9075, Whetzel & Chardon 3294.

Host Family 101. Passifloraceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3403.××20 Cols. thin; hc. subglobose, large; ps. straight, obtuse, to 140 μ ..... *passiflorae* (243)

Meliola

31½3.4332 Cols. thin to subdense, velvety; hc. subglobose, large; ms. simple, obtuse, torulose to twisted at apex ..... *smeathmanniae* (244)

3111.5321 Cols. dense, velvety; hc. ovate to lobate, large; ms. straight, acute ..... *aristata* (245)

3111.4221 Cols. thin to subdense; hc. globose to oblong; ms. acute ..... *paropsiae* (246)

(243) *Irenopsis passiflorae* Hansf., Sydowia **9**: 53. 1955.

Cols. hyphyllous and caulicolous, thin, to 3 mm. diam. Hyphae crooked, cells mostly 18—28×7—9 μ, branching opposite or irregular, closely interwoven-reticulate. Ch. alternate or opposite, straight or bent, spreading or antrorse, 18—27 μ long; stc. cuneate to cylindric, 8—10 μ long; hc. globose to ovate or clavate, broadly rounded above, entire, 15—23×11—17 μ. Mh. few, mixed with ch., alternate, ampulliform, 17—23×8—9 μ. P. scattered, immature; ps. 3—6, erect or spreading, straight, 1—2-septate, obtuse, dark brown, to 140×9—10 μ, smooth. Spores not seen.

On *Passiflora* sp., Ecuador, Lagerheim in P, type.

This species is probably what was reported from Brazil on *Passiflora* sp., as *Meliola molleriana*, by Rehm (1901) and Theissen (1910), but their specimens have not been seen by me.

(244) *Meliola smeathmanniae* Hansf. & Deight., Mycol. Paper, IMI **23**: 8. 1948.

Cols. amphigenous, to 3 mm. diam., thin to subdense, velvety. Hyphae substraight to slightly undulate, cells mostly 25—20×8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or about 2% opposite, 17—26 μ long; stc. cylindric, 4—9 μ long; hc.

subglobose to wide ovate, entire, 12—18×10—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—26×8—10 μ. Ms. numerous, closely scattered, to 450×10 μ, slightly bent to somewhat flexuous, simple, obtuse, apex torulose to spirally bent, not uncinate. P. scattered to 220 μ diam., verrucose. Sp. cylindric, obtuse, 4-septate, constricted, 43—49×15—20 μ.

On *Smeathmannia laevigata*, Sierra Leone, Deighton 1893, type.

(245) ***Meliola aristata*** Toro, Mycologia **19**: 74. 1927.

Cols. epiphyllous, to 3 mm. diam. Hyphae closely interwoven, cells 36—40×8—10 μ. Ch. alternate, 25—33 μ long; stc. 7—11 μ long; hc. ovate or sometimes lobed, 18—22 μ diam. Mh. few, opposite, ampulliform, about 22 μ long. Ms. numerous, straight, simple, acute, to 300×12—14 μ. P. glabrous, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 50—54×20—22 μ.

On *Passiflora* sp., San Domingo, Kern & Toro 181, type.

This species is known to the present author only by the original description, of which a condensed version is given above.

(246) **Meliola paropsiae** (Beeli) Hansf.. comb. n.

= *Meliola polytricha* K. & C. var. *paropsiae* Beeli, Bull. Soc. Roy. Bot. Belge, 60: 99. 1927.

Cols. amphigenous, thin to subdense, to 2 mm. diam. Hyphae substraight, to undulate, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 20—30×8—10 μ. Ch. alternate, spreading or slightly antrorse. straight or bent, 20—28 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose to oblong, entire, 15—18×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—24×8—10 μ. Ms. not numerous, mostly grouped around P., straight, simple, acute, to 290×9—11 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—48×17—20 μ.

On *Paropsia* sp., Congo Belge, Vanderyst 9777, type (BRUX, FLS).

Host Family 103. Cucurbitaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3301.4220	Cols. thin; hc. subglobose, entire; ps. uncinate, obtuse	*melothriae*	(247)

Asteridiella

3101.4220	Cols. subdense; hc. angulose to sublobate; P-cells sonoid, to 30 μ high	*triloba*	(248)
3101.4220	Cols. thin; hc. subglobose, entire; P-cells conoid, to 20 μ high	*anguriae*	(249)
3101.3220	Cols. dense; hc. subglobose; P-cells rounded, slightly projecting	*nigra*	(250)

3101.3220 Cols. thin to subdense; hc. clavate or irregularly angulose, elongate; P-cells rounded to obtuse conoid, to 20 μ high ..... *confragosa* (251)

Meliola

3141.4221 Cols. subdense, subvelvety; hc. angulose to lobate; ms. 2-dichotomous, acute ..... *cucurbitacearum* (252)

31¾3.3222 Cols. subdense; hc. subglobose to ovate, entire; ms. dentate to furcate ..... *cogniauxiae* (253)

3131.3221 Cols. dense; hc. subglobose to angulose; ms. 2—3-dentate to 20 μ ..... *cyclantherae* (254)

(247) *Irenopsis melothriae* Baker & Dale. Mycol. Paper. IMI **33**: 11. 1951.

Cols. epiphyllous, to 2 mm. diam., thin, smooth. Hyphae sinous, cells mostly 22—35×5—8 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, subantrorse, 14—22 μ long; stc. cylindric or cuneate, 4—7 μ long; hc. subglobose to ovate, entire, straight or sometimes recurved, 12—16×10—14 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 14—22×6—8 μ. P. scattered, to 175 μ diam., verrucose; ps. 2—7, erect-spreading, brown, continuous, uncinate, obtuse, smooth, to 90×8—9 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—40×13—16 μ.

On *Melothria trilobata*. Trinidad. Baker 977 (type), 497, 1547 (IMI).

(248) *Asteridiella triloba* (Wint.) Hansf., Sydowia **10**: 50. 1957.
= ***Meliola triloba*** Wint., Hedwigia **25**: 95. 1886.
= *Irene triloba* (Wint.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.
= ***Irenina triloba*** (Wint.) Stev., l. c., **25**: 467. 1927.

Cols. epiphyllous, to 2 mm. diam., often confluent, subdense. Hyphae substraight or slightly undulate, cells mostly 20—25×6—7 μ, branching opposite or irregular at wide angles, closely radiating-reticulate. Ch. alternate, more or less antrorse, 17—25 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. 3—4-rounded-angulose to 3-lobate, 12—20×11—18 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—22×7—9 μ. P. in central group, to 200 μ diam., surface cells obtusely conoid, slightly bent, to 28 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—46×15—18 μ.

On *Cucurbitaceae* indet., San Thomé, Moller, type; — On *Cucumeropsis edulis*, Sierra Leone, Deighton 2210; — On *Physedra berteri*, Sierra Leone, Deighton 1314, 1535, 1656, 5020, 2196; — On *Cucurbitaceae* indet., Congo Belge, Hendrickx 3609.

(249) *Asteridiella anguriae* (Stev.) Hansf., Sydowia **10**: 46. 1957.
= ***Irenina anguriae*** Stev., Ann. Mycol. **25**: 464. 1927.

Cols. epiphyllous, subdense, to 10 mm. diam. Hyphae slightly undulate, cells mostly 20—30×6—7 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate, straight,

16—23 μ long, antrorse or spreading; stc. cuneate to cylindric, 3—9 μ long; hc. globose, entire or slightly angulose, 13—16 × 12—14 μ. Mh. mixed with ch., opposite or alternate, sometimes ternate, ampulliform, 15—20 × 6—8 μ. P. scattered, verrucose, to 160 μ diam., surface cells obtusely conoid, to 20 μ high. Sp. oblong, to ellipsoid, obtuse, 4-septate, slightly constricted, 36—40 × 14—16 μ.

On *Anguria* sp., British Guiana, Stevens 205, type (FLS); Trinidad, Thaxter 7460 (F); — On *Gurania spinulosa*, Trinidad, Baker 1842, 498 (IMI); — On *Cayaponia subsessilis*, Trinidad, Baker 1338 (IMI); — On *Cucurbitaceae*, indet., Panama, Stevens 834, 1136; Costa Rica, Stevens 854 (FLS).

(250) *Asteridiella nigra* (Stev.) Hansf., Sydowia **10**: 49. 1957.
= *Irenina nigra* Stev., Ann. Mycol. **25**: 462. 1927.

Cols. epiphyllous, crustose, dense, to 2 mm. diam. Hyphae crooked, cells mostly 10—15 × 6—7 μ, branching alternate or irregular, acute, densely reticulate and almost solid. Ch. alternate, subantrorse, straight or slightly bent, 15—27 μ long; stc. cuneate, 3—9 μ long; hc. subglobose to ovate, entire, 10—17 × 10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—21 × 7—8 μ. P. scattered, rough, to 170 μ diam., surface cells rounded to obtusely conoid, to 15 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—37 × 13—15 μ.

On *Cucurbitaceae* indet., Costa Rica, Stevens 312, type (FLS).

(251) *Asteridiella confragosa* (Syd.) Hansf., Sydowia **10**: 47. 1957.
= *Meliola confragosa* Syd., Leafl. Philipp. Bot. **5**: 1536. 1912.
= *Irene confragosa* (Syd.) Syd., Ann. Mycol. **15**: 195. 1917.
= *Irenina confragosa* (Syd.) Stev., l. c., **25**: 465. 1927.

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae sinuous, cells mostly 20—25 × 6—8 μ branching opposite or irregular, at wide angles, closely interwoven-reticulate. Ch. alternate, antrorse or spreading, straight or bent, 20—28 μ long; stc. cylindric, 4—13 μ long; hc. ovate and entire, or more usually truncate to 3—4-sublobate, straight or variously bent, versiform, 12—20 × 8—14 μ. Mh. mixed with ch., or sometimes separate, alternate or opposite, ampulliform, 12—19 × 5—8 μ. P. in loose central group, verrucose, to 180 μ diam., surface cells from merely rounded to obtusely conoid, projecting to 18 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—38 × 11—14 μ.

On *Trichosanthes quinquangularis*, Philippines, PBS 12625, type; PBS 8606; — On *Luffa acutangula*, Malaya, Johnston 394, 392; — On *Luffa cylindrica*, Philippines, PBS 25331; Sumatra, Yates 114 (FLS); — On *Trichosanthes villosa*, Philippines, PBS 34639 (FLS); — On *Cucurbitaceae* indet., Philippines, PBS 16875, 24696, 32144.

(252) *Meliola cucurbitacearum* Stev., Illinois Biol. Monogr., **2**: 526. 1916.

Cols. epiphyllous, to 3 mm. diam., subvelvety, sometimes caulicolous. Hyphae substraight to slightly undulate, cells mostly 20—30 × 6—7 μ, branching alternate or irregular, acute, closely radiating-reticulate. Ch. alternate or unilateral, subantrorse, 19—30 μ long; ste. cuneate to cylindric, 5—11 μ long; he. versiform, irregularly rounded-lobate, often bent, 13—20 × 11—15 μ. Mh. separate, alternate or opposite, ampulliform, 15—20 × 5 μ. Ms. numerous in centre of colony, to 200 × 9—10 μ, apex 2-dichotomous, branches wide-spreading, 1-ry to 35 μ, 2-ry to 50 μ, acute. P. scattered, to 120 μ diam., verrucose., Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 37—42 × 13—14 μ.

On *Cayaponia* sp., Porto Rico, Stevens 8732, type (FLS); — On *C. americana*, San Domingo, Ciferri, Mycofl. doming. exs. 249.

(253) *Meliola cogniauxiae* Hansf., Sydowia Beih. 1: 104. 1957.

Cols. epiphyllous, to 2 mm. diam., subdense, thinly velvety. Hyphae substraight to flexuous, branching opposite, acute, closely reticulate, cells mostly 15—20 × 6—7 μ. Ch. alternate or opposite, subantrorse, straight or bent, 13—19 μ long; ste. cylindric, 3—5 μ long; he. from subglobose to ovate, straight or bent, entire, 10—14 × 8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 7—9 μ. Ms. faily numerous, scattered and grouped around P., straight, to 330 × 9 μ, apex 2- 3-dentate (—15 μ) or 2—3-furcate to 30 μ. P. scattered, verrucose, to 160 μ diam., Sp. oblong, obtuse, 4-septate, constricted, 32—40 × 11—13 μ.

On *Cogniauxia cordifolia*, Congo Belge, Vanderyst 35228 (type), 34822, 34824, 40643, 40644, 44173 (BRUX).

(254) *Meliola cyclantherae* Syd., Ann. Mycol. 28: 55. 1930.

Cols. epiphyllous or rarely hypophyllous or caulocolous, to 2 mm. diam., dense. Hyphae sinuous to crooked, cells 10—30 × 7—9 μ, branching alternate or irregular, rarely opposite, acute, densely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 17—28 μ long; ste. cylindric to cuneate, 4—8 μ long; he. subglobose or ovate and entire, or often irregularly rounded-angulose to sublobate, 10—20 × 8—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 7—8 μ. Ms. scattered, few to fairly numerous, substraight, to 350 × 7—9 μ, apex rarely simple and acute, usually 2—3-dentate, to 20 μ. P. in loose central group, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—37 × 12—14 μ.

On *Cyclanthera leptostachya*, Venezuela, Sydow, Fung. venez. 337, type.

Host Family 104. Begoniaceae.

(255) *Meliola begoniae* Hansf., Proc. Linn. Soc. London 158: 32. 1946.

Cols. amphigenous, mostly epiphyllous, minute, subdense. Hyphae sinuous, cells 15—25×7—8 μ, branching alternate or unilateral, acute, closely reticulate. Ch. alternate, subantrorse, 16—21 μ long; stc. cylindric, 2—7 μ long; hc. usually 3-angulose to sublobate, straight or bent, 10—16×10—14 μ. Mh. usually separate in centre, opposite, ampulliform, 13—20×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 380×7—8 μ. P. in close central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—41×13—16 μ.

On *Begonia meyeri-johannis*, Kivu, Congo Belge, Hansford 3578, type; Hendrickx 2544, 2559.

Host Family 106. Caricaceae.

(256) *Meliola papayae* Deighton, Sydowia **11**: 112. 1958.

Cols. thin, to 3 mm. diam. Hyphae substraight to flexuous, cells 20—35×6—7 μ, branching alternate or opposite at wide angles, loosely reticulate. Ch. alternate or opposite, spreading, straight or slightly reflexed, 12—17 μ long; stc. cylindric, 2—5 μ long; hc. globose, entire, 9—14 μ diam. Mh. mixed with ch., alternate or opposite, ampulliform, 14—19×6—8 μ. Ms. scattered and grouped around P., straight, to 240×8 μ, apex 3—4-dentate to 8 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 37—43× 16—17 μ, 4-septate, the central cell sometimes the largest.

On ripe fruit of *Carica papaya*, Sierra Leone, Deighton 5705, type.

Note. Rehm (1901) and Theissen (1910) reported *Meliola molleriana* on *Carica*, Brazil; I have been unable to trace their specimens, but if their reports are based on a true *Irenopsis*, it should be placed as a new species.

Host Family 107. Cactaceae.

(257) *Meliola opuntiae* Hansf., Sydowia **10**: 81. 1957.

Cols. dense, velvety, to 2 mm. diam. Hyphae straight, cells mostly 18—30×8—9 μ, branching opposite, acute, densely radiating-reticulate. Ch. alternate, subantrorse, straight or bent, 19—28 μ long; stc. cylindric, 4—9 μ long; hc. subglobose, cylindric or piriform, entire, 14—20×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—10 μ. Ms. numerous, scattered, straight, simple, acute, to 400×10—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 46—51× 17—20 μ.

On *Opuntia tuna*, Jamaica, Martyn 151, type 298 (IMI).

Rehm (1901) and Theissen (1910) report *Meliola araliae* on Cactus Sp. from Brazil; no specimens have been available to me for examination.

Host Family 108. Theaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.6340	Cols. dense; hyphae substraight; hc. subglobose to ovate	*toquian*	(258)

Irenopsis

3401.4220	Cols. dense; hyphae straight; hc. globose; ps. straight, obtuse	*cryptocarpa*	(259)

Meliola

3141.5321	Cols. thin, subvelvety; hyphae crooked; hc. subglobose to irregular; ms. 3-4-dichotomous .	*schimae*	(260)
3133.5332	Cols. dense, velvety; hyphae straight; hc. ovoid, entire; ms. dentate to 14 u	*schimicola*	(261)
3131.4323	Cols. dense; hyphae substraight; hc. ovate		!!
3131.4323	Cols. dense; hyphae substraight; hc. ovate to oblong, entire; ms. dentate to 15 μ	*theacearum*	(262)
31⅓1.4223	Cols. thin; hyphae undulate; hc. subglobose to oblong, entire; ms. acute, obtuse or 2-4-dentate	*camellicola*	(263)

(258) *Amazonia toquian* Petr., Sydowia **9**: 530. 1955.

Cols. mostly epiphyllous, to 10 mm. diam. or confluent. Hyphae substraight, branching alternate or opposite, densely reticulate and forming a thin, continuous membrane, 7—12 μ thick. Hypopodia few, variable in shape and size, depressed-hemispheric, rarely pulvinate, ellipsoid or ovoid, 5—20×10—22 μ. Ascomata solitary or acattered, rounded, 400—800 μ diam., conoid, 300—350 μ high, becoming widely open at maturity; upper layer of radiating mycelium. Spores oblong-clavate, obtuse, 3-septate, constricted, 53—70×18—22 μ.

On *Ternstroemia toquian*, Philippines, Clemens 7197 (type), 218.

(259) **Irenopsis cryptocarpa** (Ell.& Mart.) Hansf., comb. n.

= *Meliola cryptocarpa* Ell. & Mart., Amer. Natural. **17**: 1284. 1883.

Irenina cryptocarpa (E. & M.) Hansf., Proc. Linn. Soc. London **157**: 171. 1946.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae straight, cells mostly 10—12×8—10 μ, branching opposite at wide angles, densely reticulate. Ch. crowded, alternate, straight, 15—22 μ long; subantrorse; stc. cylindric, 3—7 μ long; hc. globose to clavate, entire, 12—15×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform. P. scattered, verrucose, to 180 μ diam.; ps. 0—12, straight, simple, obtuse, continuous, to 120×7 μ, the surface of upper part dark-granulose. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—44×16—17 μ.

On *Gordonia lasiantha*, Florida, U.S.A., Ellis, N. Amer. fungi 1293 (type), Martin, 1886 (F), Nash, Plants of Florida 1782 (F), Webber 349 (F), Thaxter 7361, 7354, 7358, 7414 (F).

(260) *Meliola schimae* Hansf., Reinwardtia **3**: 107. 1954.

Cols. hypophyllous, thin, subvelvety, to 10 mm. diam. or confluent. Hyphae crooked, cells mostly 20—25×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, usually bent, 18—24 μ long, spreading; stc. cylindric, 4—9 μ long; hc. subglobose, ovate, piriform or irregular and often somewhat pointed at apex, versiform, often bent, 11—17×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—28×8—9 μ, neck elongate. Ms. loosely scattered, to 270×10—11 μ, 3—4-dichotomous, branches 1-ry to 50 μ, 2-ry to 30 μ, 3-ry to 30 μ, apices acute, somewhat spreading. P. scattered, globose, verrucose, to 160 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 36—53×20—23 μ.

On *Schima noronhae*, Java, Boedijn 1212 p. p., type, 1730 p. p. (BO).

(261) *Meliola schimicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **30**: 421. 1940

Hyphae straight, cells mostly 14—28×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or alternate, crowded, straight or bent, antrorse, 14—19 μ long; stc. cylindric, 3—6 μ long; hc. ovoid, entire, 11—16×8—9 μ. Mh. few, mixed with ch., opposite, ampulliform, 19—30×7—9 μ. Ms. scattered and grouped around P., straight, to 500×8—10 μ, apex 2—5-dentate to 14 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—55×14—23 μ.

On *Schima kankaoensis*, Formosa, Yamamoto, type; — On *S. noronhae*, Java, Boedijn in BO 12411, 12847, 12782, 13125, 14534.

(262) *Meliola theacearum* Stev., Ann. Mycol. **26**: 207. 1928.

Cols. mainly epiphyllous, dense to crustose, to 3 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×7—9 μ, branching opposite, acute, densely reticulate-interwoven. Ch. alternate, usually straight, antrorse, 17—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. oblong, entire, 12—14×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—28×9—11 μ, neck elongate. Ms. few, scattered, to 800×9—11 μ, apex simple and obtuse (?immature) or 2—4-dentate to 15 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×18—21 μ.

On *Schima* sp., Malaya, Butler in IMI 25720, type; — On *S. noronhae*, Java, Boedijn in BO 12851, 12782 p. p., 13110.

(263) *Meliola camellicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 53. 1941.

Cols. mostly hypophyllous, widely effuse, thin, to 25 mm. diam. or confluent. Hyphae undulate, cells mostly 18—37×5—7 μ, branch-

ing opposite or irregular, very loosely reticulate. Ch. alternate or more scattered, 13—19 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to oblong, entire, 8—14×7—9 μ. Mh. scattered, mixed with ch., opposite or alternate, ampulliform, 17—28×6—8 μ, neck elongate. Ms. few, mostly around P., straight, to 560×9—12 μ, acute, obtuse, or 2—4-dentate to 37 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted 44—48×13—19 μ.

On *Camellia shinkoensis*, Formosa, Yamamoto, type (not seen by the present author).

Host Family 110. Marcgraviaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4330	Cols. dense, crustose; hyphae straight; hc. piriform or angulose; ps. straight, obtuse ...	*ramonensis*	(264)
3301.3220	Cols. thin to subdense; hyphae straight or undulate; hc. subglobose, entire; ps. obtuse, contorted or twisted at apex.....	*marcgraviae*	(265)

Asteridiella

3101.4220	Cols. thin to dense; hypae crooked; hc. subglobose, entire or sublobate.....	*marcgraviicola*	(265)
3101.3220	Cols. thin; hyphae straight or undulate; hc. angulose to sublobate, large	*cyphopoda*	(266)

(264) *Irenopsis ramonensis* (Syd.) Stev., Ann. Mycol. **25**: 436. 1927.

= *Meliola ramonensis* Syd., l. c., **24**: 307. 1926.

Cols. hypophyllous, 2—4 mm. diam., dense, crustose. Hyphae straight, cells mostly 15—30×7—10 μ branching at wide angles, densely reticulate. Ch. alternate, straight or bent, 25—32 μ long; hc. piriform, entire or sometimes irregular and angulose, 12—16 μ wide. Mh. few, mixed with ch., opposite, ampulliform, 18—20 μ long. Ms. none. P. scattered, verrucose, to 300 μ diam., with few erect-spreading ps., straight, obtuse, to 120×8—9 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—50×20—25 μ.

On *Marcgravia nepenthoides*, Costa Rica, Sydow, Fung. costaric. 330, type (not seen by present author).

(265) **Irenopsis marcgraviae** (Tehon) Hansf., comb. n.

= *Meliola marcgraviae* Tehon, Bot. Gaz. **67**: 506. 1919.

= *Irene marcgraviae* (Tehon) Stev. & Tehon, Mycologia **18**: 22. 1926.

= *Irenina marcgraviae* (Tehon) Stev., Ann. Mycol. **25**: 452. 1927.

Cols. epiphyllous, to 10 mm. diam., thin to subdense. Hyphae straight to undulate, branching opposite, acute, becoming closely reticulate-interwoven, cells mostly 20—40×5—6 μ. Ch. alternate, subantrorse, straight, 14—20 μ .long; stc. cuneate, 3—6 μ long; hc.

subglobose, 10—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. scattered, verrucose, to 140 μ diam., ps. 0—6, straight below, contorted or twisted at obtuse apex, continuous, smooth, to 110×7—8 μ, wall about 1.5 μ thick. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—42×18—20 μ.

On *Marcgravia rectiflora*, Porto Rico, Stevens 8722, type (FLS).

(265a) *Asteridiella marcgraviicola* Hansf., Sydowia **11**: 48. 1957.

Cols. amphigenous, on raised (evaginate) parts of the leaf, thin to dense, smooth. Hyphae crooked, branching opposite or irregular at wide angles, loosely to closely reticulate-interwoven, cells mostly 20—38 μ long. Ch. alternate or more scattered, antrorse or spreading, straight or irregularly bent, 22—32 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. subglobose, ovate, clavate or angulose to sublobate, versiform, 15—22×11—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 19—28×7—8 μ. P. loosely scattered, to 160 μ diam., surface cells conoid, to 14 μ high. Sp. oblong, obtuse, 4-septate, constricted, 39—45×15—18 μ.

On *Marcgravia* sp., Grenada, Thaxter 7407, type (F).

(266) **Asteridiella cyphopoda** (Cif.) Hansf., comb. nov.

= *Meliola cyphopoda* Cif., Mycopathologia **7**: 120. 1954.

Cols. epiphyllous, to 3 mm. diam. smooth, thin. Hyphae straight or undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20—35×7—9 μ (Ciferri gives 11—14 μ thick, but his drawing is not convincing). Ch. opposite or alternate (drawing shows only alternate), spreading, straight or bent, 29—43 μ long; stc. cylindric, 7—14 μ long; hc. angulose to sublobate, often bent, 20—28×8—14 μ. Mh. few, opposite or alternate, mixed with ch., conoid to ampulliform, 18—22×6—9 μ. P. globose, to 160 μ diam. Sp. oblong or ellipsoid, obtuse, 4-septate, constricted, 32—36×14—17 μ.

On *Marcgravia rectiflora*, San Domingo, Ekman s. n., type.

Specimens of this species have not been available to me, and the above account is condensed from that of Ciferri and from his drwaing; apparently the man difference from *Irenopsis marcgraviae* is in the shape of the ch. and the somewhat smaller spores; the absence of perithecial setae could easliy be an omission, as in the case of *I. marcgraviae* they were missed by both Stevens and Tehon, though present in their slides.

Host Family 113. Saurauiaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4320	Cols. dense; hyphae undulate to crooked; hc. angulose to lobate	*papillifera*	(267)
3101.3220	Cols. thin; hyphae undulate; hc. subglobose, entire	*saurauina*	(268)

Meliola

3111.4222 Cols. thin, subvelvety; hyphae substraigh; hc. globose to ovate, entire; ms. obtuse ..... *saurauiae* (269)

(267) *Asteridiella papillifera* (Syd.) Hansf., Sydowia **10**: 49. 1957.
= *Irene papillifera* Syd., Ann. Mycol. **15**: 194. 1917.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae undulate to crooked, cells mostly 20—30×9—11 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, often bent, antrorse or spreading, 22—37 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. versiform, often bent, angulose to shallowly lobate, 16—25× 12—20 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 20—26×7—9 μ. P. in central group, to 200 μ diam., rough with conoid processes to 35 μ high, dark brown, not striate. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—50×18—21 μ.

On *Saurauia elegans*, Philippines, PBS 25294 (type), 23217, Stevens 1593, 1530 p. p., 1627 p. p.; — On *S. latibractea*, Philippines, Stevens 1480 p. p. (FLS).

(268) *Asteridiella saurauina* Hansf., Sydowia **10**: 59. 1957.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. Hyphae undulate to sinuous, cells mostly 15—20×7 μ, branching opposite, at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight, 13—16 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to piriform, entire, 10—13×8—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 12—17×6—8 μ. P. scattered, verrucose, to 170 μ diam., surface cells rounded or slightly mammillate, to 12 μ high. Sp. cylindric, obtuse, 4-septate, constricted, 35—39×14—15 μ.

On *Saurauia elegans*, Philippines, Stevens 1627, type (FLS, CUP), 1530 p. p. (FLS); — On *S. latibractea*, Philippines, Stevens 1480 p. p. (FLS).

In these collections this is mixed with *Asteridiella papillifera*.

(269) *Meliola saurauiae* Syd., Ann. Mycol. **37**: 332. 1939.

Cols. epiphyllous, subvelvety, to 2 mm. diam. Hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite, acute to wide, loosely reticulate. Ch. alternate, antrorse or spreading, straight or slightly bent, 13—18 μ long; stc. cylindric to cuneate, 2—3 μ long; hc. globose, to ovate, entire, 10—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×7—9 μ. Ms. numerous, scattered, straight, simple, slightly attenuate to obtuse apex, to 350×7—9 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—42×13—15 μ.

On *Saurauia sydowii*, Ecuador, Sydow, Fung. aequator. 264-a, type; — On *S.* sp., Peru, Stevens 228 (FLS).

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.3220 Cols. thin; hyphae undulate; hc. globose or angulose ..... *ochnacearum* (270)

Meliola

3113.4222 Cols. thin; hyphae substraight; hc. cylindric to ovate, often bent; ms. acute or obtuse.... *ochnae* (271)

3111.4221 Cols. thin; hyphae straight; hc. cylindric, longer; ms. acute ..... *ourateae* (272)

(270) *Asteridiella ochnacearum* (Cif.) Hansf., Sydowia **10**: 49. 1957.

— *Meliola ochnacearum* Cif., Ann. Mycol. **36**: 217. 1938.

Cols. to 1.5 mm. diam., thin, smooth, epiphyllous. Hyphae substraight to undulate or flexuous, branching opposite at wide angles, loosely reticulate, cells mostly 15—35 × 6—8 μ. Ch. alternate, antrorse or spreading, usually straight, 14—18 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. mostly subglobose to ovate and entire, rarely rounded-angulose, 11—14 × 10—14 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 10—16 × 6—8 μ. P. scattered, verrucose, to 180 μ diam., surface cells conoid to mammillate, to 25 μ high. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 28—33 × 10—14 μ.

On *Sauvagesia erecta*, San Domingo, Ciferri, Mycofl. doming. exs. 253, type; Porto Rico, Heller 4480, Stevens 8129, 8944, 8641, 8777 (FLS), Whetzel 616 (CUP); Jamaica, Maxon & Killip 55 (F); British Guiana, Stevens 432 (FLS); Ecuador, Sydow, Fung. exot. exs. 1143 (S).

(271) *Meliola ochnae* Doidge, Trans. Roy. Soc. South Africa, 8: 141. 1920.

Cols. amphigenous, to 8 mm. diam., thin; hyphae substraight, cells mostly 20—25 × 5—6 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or opposite, 12—16 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. cylindric or ovate, entire, often uncinate-bent, 10—13 × 6—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 6 μ. Ms. scattered and grouped around P., not numerous, straight or flexuous, simple, acute or obtuse, to 350 × 6—7 μ, gradually attenuate upwards. P. scattered, globose, verrucose, to 180 μ diam., surface cells convex or irregularly conoid. Sp. subellipsoid, obtuse, 4-septate, constricted, 35—42 × 13—15 μ.

On *Ochna natalitia*, South Africa, PRET 8989, 10143, 11567; – On *O. o'connori*, South Africa, PRET 17742; – On *O. multiflora*, Sierra Leone, Deighton 2031.

(272) *Meliola ourateae* Hansf. & Deight., Mycol. Paper. IMI **23**: 8. 1948.

Cols. amphigenous, mostly epiphyllous, thin, to 8 mm. diam. or confluent. Hyphae straight, cells mostly 25—40×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate only, antrorse or spreading, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. cylindric, often bent, entire, 12—18×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, to 20×6—8 μ. Ms. few, to numerous, scattered or mostly grouped around P., straight, simple, acute, to 280×7—8 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 34—41×13—15 μ.

On *Ouratea flava*, Sierra Leone, Deighton 1852 (type), 946. 2638; — On *O. vogelii*, loc. cit., Deighton 1740; — On *O. subcordata*. Ivory Coast, Luc 423 (P).

Host Family 116. Dipterocarpaceae.

(273) *Meliola hopeae* Yates, Philipp. Journ. Sci., C. Botany, **13**: 369. 1918.

Cols. hypophyllous, thin, to 20 mm. diam. Hyphae undulate, cells mostly 25—40×5—7 μ, branching opposite, loosely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 14—20 μ long; stc. 3—7 μ long, cylindric or cuneate; hc. subglobose to cylindric, entire or rounded-angulose, straight or bent, 10—14×8—11 μ. Mh. few, mixed with ch., alternate, rarely opposite, ampulliform, 15—25×6—8 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse or acute, to 400×7—8 μ. P. scattered, verrucose, to 140 diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—38×12—14 μ.

On *Hopea* sp., Philippines, PBS 25774, type.

Host Family 118. Myrtaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.5220	Cols. thin; hyphae crooked; hc. entire or lobate; ps. straight or uncinate, obtuse	*myrciae*	(274)

Asteridiella

2101.6240	Cols. dense; hyphae crooked; hc. angulose or entire, often bent	*eucalyptorum*	(275)
3103.5330	Cols. dense; hyphae substraight to undulate; hc. ovate-oblong, entire	*acmenae*	(276)
3101.5330	Cols. dense, crustose; hyphae substraight; hc. large, stellate-lobate	*atra*	(277)
3101.5330	Cols. dense; hyphae straight to undulate; hc. angulose to lobate	*valdiviensis*	(278)

3101.5330 Cols. thin to dense; hyphae straight; hc. oblong to clavulate, entire ..... *valdiviensis* var. *integripoda* (279)

3101.5330 Cols. dense; hyphae substraight; hc. ovate to piriform, entire ..... *hughesii* (280)

3101.4240 Cols. dense; hyphae crooked; hc. ovate to clavulate, entire ..... *australiana* (281)

3101.4240 Cols. dense; hyphae substraight; hc. ovate to globose ,entire ..... *ohianus* (282)

3101.4230 Cols. thin; hyphae straight; hc. angulose to lobate ..... *zeyheri* (283)

3101.4220 Cols. thin; hyphae crooked; hc. clavate to oblong, entire, small ..... *syzygii* (284)

3101.4220 Cols. thin; hyphae straight; hc. cylindric to ovate, entire ..... *atricha* var. *major* (285)

3101.3220 Cols. thin; hyphae straight to undulate; hc. ovate-cylindric, entire ..... *atricha* (286)

3101.3220 Cols. dense; hyphae straight to snuous; hc. ovate to clavulate, entire ..... *mammillata* (287)

Meliola

2111.4232 Cols. thin; hyphae undulate; hc. subglobose to angulose; ms. acute ..... *pulchella* (288)

31⅓3.4223 Cols. thin to subdense, velvety; hyphae substraight; hc. oblong, entire; ms. acute or dentate to 12 μ ..... *helleri* (290)

3121.6343 Cols. dense, velvety; hyphae substraight; hc. large, angulose to lobate; ms. obtuse or acute, arcuate to falcate ..... *megalopoda* (291)

3121.4321 Cols. dense; hyphae straight; hc. ovate to cylindric, entire; ms. obtuse, uncinate ..... *hawaiiensis* (292)

3121.4221 Cols. dense, velvety; hyphae crooked; hc. ovate-oblong; ms. obtuse, uncinate ..... *densa* (293)

3113.6333 Cols. dense, velvety; hyphae undulate; hc. elongate, lobate, large; ms. obtuse or acute .. *queenslandica* (294)

3113.5334 Cols. thin to subdense; hyphae undulate; hc. ovate-cylindric; ms. obtuse ..... *eugeniae-jamboloidis* var. *australiensis* (295)

3113.5224 Cols. thin; hyphae substraight; hc. small, oblong or bent; ms. acute ..... *amomicola* (296)

3113.4231 Cols. subdense; hyphae straight to crooked; hc. small, subglobose-oblong; ms. obtuse to subacute ..... *leptospermi* (297)

3113.4223 Cols. thin; hyphae undulate; hc. small, subglobose to ovate; ms. acute ..... *myrtacearum* (298)

3113.4222 Cols. dense; hyphae undulate; hc. ovate to oblong; ms. obtuse ..... *eugeniae-monticolae* (299)

3112.4324 Cols. thin; hyphae straight; hc. oblong; ms. acute ..... *eugeniicola* (300)

3111.5331 Cols. dense; hyphae substraight to undulate; h. oblong; ms. obtuse ..... *eugeniae* (201)

3111.5323 Cols. dense, velvety; hyphae crooked; hc. oblong, bent or angulose; ms. obtuse ..... *eugeniae-jamboloidis* (302)

3111.4321	Cols. thin; hyphae substraight; hc. ovate to oblong; ms. obtuse	*eugeniae-calophylloidis*	(303)
3111.4323	Cols. thin; hyphae straight to undulate; hc.		
3111.4323	Cols. thin; hyphae straight to undulate; hc. ovate-oblong; ms. obtuse-attenuate	*singaporensis*	(304)
3111.4233	Cols. dense; hyphae substraight; hc. ovate to oblong; ms. acute	*eugeniae-jamboloidis* var. *paulensis*	(305)
3111.4232	Cols. thin; hyphae substraight; hc. ovate to narrow cylindric; ms. obtuse-attenuate	*cylindropoda*	(306)
3111.4222	Cols. dense, velvety; hyphae crooked; hc. ovate to angulose; ms. acute; sp. fusoid	*trichostroma*	(307)
3111.4222	Cols. dense; hyphae substraight; hc. oblong or bent; ms. subacute	*ranganathii*	(308)
3111.4221	Cols. thin to subdense; hyphae undulate; hc. ovate to subconoid; ms. acute	*eucalypti*	(309)
3111.3222	Cols dense; hyphae crooked; hc. ovate to narrow clavate; ms. obtuse-attenuate; sp. fusoid	*trichostroma* var. *olecranonis*	(310)
3111.3222	Cols. very thin; hyphae substraight to undulate; hc. subglobose to angulose; ms. obtuse or acute	*malangasensis*	(311)
3111.3221	Cols. thin; hyphae undulate; hc. ovate to clavate or angulose; ms. obtuse to subacute	*laxa*	(312)
3111.42×1	Cols. thin; hyphae straight; hc. globose to piriform; ms. obtuse to subacute	(*Robinson* 2163)	(313)

(274) *Irenopsis myrciae* Hansf., Sydowia **9**: 38. 1955.

Cols. hypophyllous, thin, to 5 mm. diam. Hyphae sinuous to crooked, cells mostly 20—30×6—7 μ, loosely interwoven-reticulate. Ch. alternate, straight or variously bent, 17—30 μ long; subantrorse; stc. cylindric, 3—10 μ long; hc. versiform, subglobose to elongate, often bent, entire, rounded-angulose or irregularly lobate, 12—23×9—16 μ. Mh. mixed with ch. alternate or opposite, ampulliform, 16—24×8—9 μ, neck elongate. P. loosely scattered, verrucose, to 170 μ diam., with 15—30 radiating setae from sides and upper half, to 150×6—8 μ, straight or slightly flexuous, simple, obtuse, sometimes sub-uncinate at apex, thin-walled, smooth, continuous or 1-septate. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—52×17—18 μ.

On *Myrcia deflexa* ,Porto Rico, Stevens 8672, type (FLS).

(275) *Asteridiella eucalyptorum* Hans., Sydowia **10**: 48. 1957.
= *Irenina eucalyptorum* Hansf., Proc. Linn. Soc., N.S.W., **78**: 69. 1953.

Cols. amphigenous, dense, to 5 mm. diam. Hyphae sinuous to crooked, branching opposite or irregular, becoming closely reticulate, cells mostly 20—30×8—9 μ. Ch. alternate, bent, 22—35 μ long;

stc. cylindric, 7—15 μ long; hc. versiform, rounded-angulose to irregularly lobate, 15—25×12—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—25×8—10 μ. P. scattered, each on a radiate disc, verrucose, to 330 μ diam., surface cells conical, projecting to 25 μ. Sp. bent ellipsoid, obtuse, 3-septate, constricted, 54—69× 17—20 μ.

On *Eucalyptus saligna*, New South Wales, Fraser 84, type in Herb. Dept. Agric., N.S.W.; — On *E. triantha*, New South Wales, Fraser 85; — On *E. microcorys*, loc. cit., Fraser 49; — On *E.* sp., loc. cit., Fraser 182 p. p.; Queensland, Bailey s. n.; — On *Backhousia myrtifolia*, New South Wales, Fraser 217, 167.

(276) *Asteridiella acmenae* Hansf., Sydowia **10**: 46. 1957.

= *Irenina acmenae* Hansf., Proc. Linn. Soc. N.S.W., 78: 68. 1953.

Cols. epiphyllous or rarely amphigenous, dense, to 2 mm. diam. Hyphae substraight to sinuous, cells mostly 12—20×7—8 μ, branching opposite, acute, closely reticulate. Ch. alternate or about 2% opposite, subantrorse, straight, 13—18 μ long; stc. cylindric, 2—5 μ long; hc. globose to oblong, entire, 10—13×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—22×7—9 μ. P. in loose central group, verrucose, to 215 μ diam., surface cells obtusely conoid, to 20 μ high. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 43—52×20—25 μ.

On *Acmena smithii* var. *minor*, New South Wales, Fraser 199 (type), in Herb. Agric. N.S.W.; — On *A. smithii*, New South Wales, Fraser 15, 159, 103; — On *Eugenia ventenatii*, New South Wqles, Fraser 185.

(277) *Asteridiella atra* (Doidge) Hansf., Sydowia **10**: 46. 1957.

= *Meliola atra* Doidge, Trans. Roy. Soc. South Africa, 8: 137. 1920.

= *Irene atra* Doidge, South African Journ. Nat. Hist. 2: 40. 1920.

= *Irenina atra* (Doidge) Stev., Ann. Mycol. **25**: 467. 1927.

Cols. amphigenous, mostly epiphyllous, crustose, dense, to 3 mm. diam., the underlying leaf tissues discoloured. Hyphae substraight, cells mostly 12—25×8—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, usually bent, antrorse or spreading, 23—37 μ long; stc. cylindric or cuneate, 6—12 μ long; hc. irregularly lobate, often bent, 17—28×16—23 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 12—18×7—8 μ. P. scattered, to 230 μ diam., verrucose. Sp. ellipsoid, obtuse, 4-septate, deeply constricted, 48—54×20—25 μ.

On *Eugenia* sp., South Africa, PRET 11594, 12436, Wood 587 (K).

(278) *Asteridiella valdiviensis* (Speg.) Hansf., Sydowia 10: 51. 1957.

= *Meliola valdiviensis* Speg., Fungi chilenses, 1910, p. 29.

= *Irenina valdiviensis* (Speg.) Stev., Ann. Mycol. **25**: 449. 1927.

Cols. amphigenous, dense, smooth, to 5 mm. diam. or confluent. Hyphae substraight to undulate or flexuous, branching opposite at wide angles, becoming densely reticulate, cells mostly 20—25×7—8 μ. Cg. alternate, atntrorse or spreading, often recurved, 20—30 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. from bent cylindric and almost entire, to very irregular and deeply lobate, versiform, 15—23× 11—22 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. 18—23×7—9 μ. P. scattered, verrucose, to 250 μ diam., surface cells obtusely conoid, to 18 μ high by 30—35 μ diam. at the base. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—54× 19—23 μ.

On *Eugenia* sp., Chile, SPEG 601, 606,

(279) *Asteridiella valdiviensis* (Speg.) Hansf. var. *integripoda* Hansf., Sydowia **10**: 51. 1957.

Cols. mostly hypophyllous, to 1.5 mm. diam., rarely confluent, thin, smooth. Hyphae straight, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 25—30×8—10 μ. Ch. alternate, subantrorse or spreading usually straight, 25—35 μ long; stc. cylindric to cuneate, 5—14 μ long; hc. cylindric to clavate, entire or very slightly angulose, 17—22×10—14). Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 16—23×8—9 μ. P. in central group, verrucose, to 280 μ diam., surface cells rounded or obtusely conoid, to 15 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 48—55×20—24 μ, the central cell usually slightly the largest.

On *Myrceugenia chequen*, Chile, Spegazzini 13406, type; — On *Eugenia* sp., Argentina, Molfino in SPEG 567, differing in dense colonies with cells 15t20×8—9 μ; ch. 18—28 μ long.

(280) *Asteridiella hughesii* Hansf., Sydowia **10**: 59. 1957.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae substraight, cells mostly 15—25×7—9 μ, branching opposite, acute, densely reticulate. Ch. alternate, antrorse, straight, 16—21 μ long; stc. cylindric, 3—6 μ long; hc. ovate to piriform, entire, 12—15×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22× 7—9 μ. P. scattered, verrucose, to 240 μ diam., surface cells rounded to obtusely conoid, to 20 μ high. Sp. oblong, obtuse, 4-septate, constricted, 47—51×18—21 μ.

On *Syzygium guineense*, Gold Coast, Hughes 172 (IMI 49535, type).

(281) *Asteridiella australiana* Hansf., Sydowia **10**: 47. 1957. (3101.4240)

= *Irenina australiana* Hansf., Proc. Linn. Soc. N.S.W. **78**: 69. 1953.

Cols. epiphyllous, dense, 1—2 mm. diam. or confluent. Hyphae

crooked, cells mostly 15—25×6—7 μ, branching opposite or irregular, densely reticulate. Ch. alternate or less than 1% opposite, straight or bent, 11—21 μ long; spreading or antrorse; stc. cylindric, 2—8 μ long; hc. cylindric to clavate, entire, often bent, 7—15×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×7—9 μ. P. scattered, verrucose, to 350 μ diam., surface cells conoid, projecting to 25 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 42—49×17—19 μ.

On *Eucalyptus*, sp., Queensland, Bailey s. n.; New South Wales, Fraser 182.

In both these collections this occurs mixed with *A. eucalyptorum*.

(282) **Asteridiella ohiana** (Stev.) Hansf.,

= *Amazonia ohianus* Stev., Bull. Bishop. Mus. Honolulu, **19**: 50. 1925.

Cols. epiphyllous, dense, smooth, to 2 mm. diam. Hyphae substraight, branching opposite or irregular at acute angles, closely radiating-reticulate and nearly solid, cells mostly 10—15×6—7 μ. Ch. alternate, antrorse, usually straight, 14—19 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. globose to wide ovate, entire, 10—14×9—13 μ. Mh. few, mixed with ch., alternate, ampulliform, 14—20×7—9 μ. P. scattered, globose, rough, to 360 μ diam., surface cells conoid, to 20 μ high; easily deciduous and leaving a radiate base. Sp. oblong to subellipsoid, 4-septate, obtuse, constricted, 40—46×17—19 μ.

On *Metrosideros polymorpha*, Hawaii, Stevens 842 (type), 1065, 780 (FLS, F).

(283) *Asteridiella zeyheri* (Doidge) Hansf., Sydowia **10**: 51. 1957. (3101.4230)

= *Irene zeyheri* Doidge, Bothalia **1**: 75. 1922.

= *Irenina zeyheri* (Doidge) Stev., Ann. Mycol. **25**: 467. 1927.

Cols. amphigenous, thin, to 4 mm. diam. or confluent. Hyphae straight, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, subantrorse, straight or bent, 20—28 μ long; stc. cylindric or cuneate, 3—7 μ long; hc. clavate, usually bent, margin rounded-angulose to shallowly lobate, 12—18×9—14 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 14—20×6—8 μ. P. scattered, verrucose, to 240 μ diam., surface cells rounded to conoid, projecting to 25 μ. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 36—44×16—19 μ.

On *Eugenia zeyheri*, South Africa, PRET 9126, 10878, 12272, 12388, 14211, 17264.

(284) *Asteridiella syzygii* Hansf., Sydowia **10**: 00. 1957.

= *Irenina syzygii* Hansf., Proc. Linn. Soc. London **156**: 105. 1944.

Cols. amphigenous, thin, to 3 mm. diam. Hyphae sinuous to

crooked, cells mostly about 20×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, antrorse or retrorse, straight or bent, 15—20 μ long; stc. cylindric, 3—7 μ long; hc. clavate to cylindric, entire, straight or slightly bent, 11—13×7—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 13—19×6—8 μ. P. scattered, verrucose, to 180 μ diam., surface cells conoid, to 25 μ high. Sp. oblong, obtuse, 4-septate, slightly constricted, 44—48× 17—20 μ.

On *Syzygium cordatum*, Uganda, Hansford 3179 (type), 3598.

(285) *Asteridiella atricha* (Speg.) Hansf. var. major Hansf., Beiheft **1**: 95. 1957.

Cols. amphigenous, thin, smooth, to 2 mm. diam. Hyphae substraight, branching subrectangular, loosely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, spreading or slightly antrorse, straight or variously bent, especially on lower surface of leaf, 17—24 μ long; stc. cylindric, 3—7 μ long; hc. elliptic to ovate, the apex attenuate or obtusely rounded, entire, straight or bent, 11—17×7—8 μ. Mh. mixed with ch., alternate or opp9site, ampulliform, 17—22×7—8 μ. P. scattered, globose, rough, to 180 μ diam.; surface cells obtusely conoid to submammillate, to 30 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×16—19×14 μ.

On *Myrcia splendens*, Porto Rico, Stevens 8465 (type), 5646 (FLS); — On *M. deflexa*, Porto Rico, Stevens 8268; San Domingo, Ciferri, Mycofl. doming. exs. 166; — On *Eugenia whytei*, Sierra Leone, Deighton 2028; — On *Myrtaceae* indet., Sao Paulo, Brazil, Usteri 65 (S).,

(286) *Asteridiella atricha* (Speg.) Hansf., Sydowia **10**: 46. 1957.
= *Meliola laxa* Gaill. var. *atricha* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 355. 1924.
= *Irenina atricha* (Speg.) Stev., Ann. Mycol. **25**: 469. 1927.

Cols. amphigenous, thin, smooth, to 2 mm. diam. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, subantrorse or spreading, straight or slightly reflexed-bent, 15—22 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to cyindric, entire, often slightlay bent, 12—16×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—24×7—9 μ. P. loosely scattered, verrucose, to 180 μ diam., surface cells obtusely conoid, to 15 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—39×15—17 μ.

On *Eugenia* sp., Argentina, Spegazzini 1828, type.

(287) *Asteridiella mammillata* Hansf., Sydowia **10**: 49. 1957.
= *Irene mammillata* Hansf., Sydowia **9**: 57. 1955.

Cols. epiphyllous, dense, to 3 mm. diam., rarely confluent. Hyphae substraight to sinuous, cells mostly 15—25×6—7 μ, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate,

straight or bent, antrorse or spreading, 17—23 μ long; st. cylindric, 3—10 μ long; hc. ovate-piriform:-fa¼ = 8ate, entire, 12—16×8—10 μ.; Mh. scattered, alternate, rarely opposite, ampulliform, 18—24×7—9 μ, neck elongate. P. scattered, rough, to 180 μ diam., surface cells obtusely conoid to mammillate, to 25 μ high. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 34—39×14—16 μ.

On *Myrtaceae* indet., Brazil, Usteri 86, type (S, ex Rehm).

(288) *Meliola pulchella* Speg., Bol. Acad. Nac. Cienc. Cordoba, **11**: 227. 1889.

Cols. very thin, large, epiphyllous. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 25—45×6—5 μ. Ch. alternate, spreading or antrorse, straight or bent, 13—18 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose, ovate, or irregularly angulose to shallowly sublobate, 11—13×9—14 μ. Mh. not seen. Ms. few, scattered and grouped around P., straight, simple, acute, to 360 ×6—7μ. P. scattered, verrucose, to 220 μ diam. Sp. cylindric to fusoid, obtuse, often slightly bent, 3-septate, constricted, 38—44×13—15 μ.

On *Myrtaceae* indet., Brazil, Puiggari 1699, type (SPEG).

(290) *Meliola helleri* Earle, Bull. New York Bot. Gard. **3**: 307. 1905.

Cols. amphigenous, to 6 mm. diam., thin to subdense, more or less velvety. Hyphae substraight, cells mostly 10—20×5—7 μ, branching close, opposite, acute or wide, loosely to closely reticulate. Ch. alternate or to 5% opposite, subantrorse or often slightly recurved, 12—19 μ long; stc. cylindric, 2—5 μ long; hc. from subglobose to oblong-clavulate with wide rounded apex, entire, 9—15×6—9 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 14—20×5—8 μ. Ms. numerous, scattered and grouped around P., straight, simple and acute, or more often variously dentate to 12 μ. up to 550×8—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, 4-septate, slightly constricted, 35—40×13—16×12—14 μ.

On *Myrtaceae* indet., Porto Rico, Heller 6251, type.

(291) *Meliola megalopoda* Syd., Ann. Mycol. **15**: 189. 1917.

Cols. amphigenous, to 6 mm. diam., dense, velvety, easily secedent. Hyphae substraight to sinuous, cells mostly 20—30×7—9 μ, branching alternate or irregular, acute, rarely opposite, densely radiating-reticulate. Ch. alternate, antrorse, mostly straight, 30—45 μ long; hc. rarely truncate-clavate and entire, usually irregularly and deeply 3—4-lobate, straight or bent, 20—29×13—23 μ. Mh. few, mixed with ch., alternate, ampulliform, 40—50×9—10 μ, neck narrow, elongate. Ms. numerous, scattered, simple, obtuse, to 900×10—12 μ, the upper half more or less falcate. P. scattered, verrucose, to 350 μ

diam. Sp. oblong, obtuse, 4-septate, constricted, 62—70×25—30× 21—25 μ.

On *Eugenia* sp. (fide Stevens & Roldan, Philipp. Journ. Sci. 56: 60. 1935), Philippines, PBS 3070, type, Baker, Fung. Malay 551.

(292) *Meliola hawaiiensis* Stev., Bull. Bishop Mus. **19**: 37. 1925.

Cols. epiphyllous, dense, strongly adherent, to 2 mm. diam. Hyphae straight or slightly undulate, cells mostly 10—15×7—9 μ, branching opposite, acute, densely reticulate and almost solid. Ch. alternate, straight, antrorse, 15—20 μ long; stc. cylindric, 3—6 μ long; hc. ovate to cylindric, entire, straight or rarely slightly recurved, 11—15×7—9 μ. Mh. not seen. Ms. few, scattered, simple, obtuse, to 200×7—8 μ, upper part strongly arcuate to hamate. P. closely scattered, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 44—49×20—23 μ.

On *Eugenia* sp., Hawaii, Stevens 667 (type), 490, 275, 315; — On *E. sandwicensis*, Hawaii, Lyon 60-a (FLS, CUP).

(293) *Meliola densa* Cooke, Grevillea **12**: 85. 1884.

Cols. hypophyllous, dense, somewhat velvety, to 3 mm. diam. or confluent. Hyphae crooked, cells mostly 20—25×7—8 μ, branching irregular, densely reticulate, the meshes enclosing the host stomata. Ch. alternate or very rarely opposite, variously bent, mostly 15—25 μ long; stc. cylindric, often bent, 5—14 μ long; hc. from ovate and entire to cylindric-clavate, or bent and angulose, rounded or truncate at apex, 12—20×7—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, simple, obtuse, broadly uncinate to arcuate above, or in some clonies substraight and almost acute, to 280×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—48×16—19 μ.

On *Eucalyptus* sp., Queensland, Bailey 587, 566, Langdon 1503; — On *E. intermedia*, Queensland, Cowan 1772; — On *E. tesselaris*, Queensland, Cowan 1771. — On *Eugenia calophylloides*, Sierra Leone, Deighton 729; — On *E. dawei*, Sierra Leone, Deighton 1085; — On *E. whytei*, loc. cit., Deighton 2022; — On *E. calycina*, loc. cit., Deighton 387; — On *E. tereticornis*, New Guinea, Shaw 823 (WARI 7759); — On *E.* sp., New Guinea, Shaw 406 (WARI 7760).

The Sierra Leone collections differ from the Australian in their straighter and more acute setae, and in narrower spores.

(294) *Meliola queenslandica* (Fisher) Hansf., Proc. Linn. Soc. N.S.W. **78**: 66. 1953.

= *Meliola polytricha* (K. & C.), var. *queenslandica* E. Fisher, Proc. Roy. Soc. Victoria **62**: 134. 1950.

Cols. amphigenous, 1—2 mm. diam., rarely confluent, dense, thinly velvety. Hyphae substraight to flexuous or undulate, cells mostly 15—25×7—9 μ, branching opposite, acute or wide, densely

radiating-reticulate. Ch. opposite or alternate, subantrorse, straight or bent, 20—35 μ long; stc. cuneate to cylindric, 5—12 μ long; hc. irregularly sinuous-lobate, often retrorse-bent, 12—25×10—17 μ. Mh. mixed with ch., opposite, ampulliform, 15—20×7—9 μ. Ms. few to numerous, scattered, straight, simple, acute or obtuse, to 640—10—11 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 66—65×24—30×16—22 μ.

On *Callistemon viminalis*, Queensland, Fisher (type), White s. n., Tryon s. n.; New South Wales, Fraser 235; — On *C. lanceolatum*, North Queensland (S); — On *C. saligna*, New South Wales, R. Brown 570 (K); Fraser 50,106; — On *C.* sp., Queensland, Bailey 633.

(295) *Meliola eugeniae-jamboloidis* Hansf. var. australiensis Hansf., Proc. Linn. Soc. N.S.W. 78: 66. 1953.

Cols. hypophyllous, thin to subdense, 1—2 mm. diam. or confluent. Hyphae sinuous to flexuous, cells mostly 20—30×6—8 μ, branching opposite or irregular at wide angles, becoming closely reticulate in older colonies. Ch. alternate or up to 15% opposite, antrorse or spreading, often bent, 20—32 μ long; stc. cylindric, 5—15 μ long; hc. cylindric to ovate, entire, or often irregularly angulose and bent, 12—20×6—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—28×7—9 μ, neck elongate. Ms. scattered, few to fairly numerous, straight, simple, obtuse, to 1100×7—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 45—51×18—21 μ.

On *Tristania* sp., Queensland, Bailey 587, type; — On *T. suaveolens*, New South Wales, Fraser 228; — On *Rhodomyrtus psidioides*, New South Wales, Fraser 216, 195; — On *Rhodamnia argentea*, New South Wales, Fraser s. n.

(296) *Meliola amomicola* Stev., Illinois Biol. Monogr. 2: 508. 1916.

Cols. mostly hypophyllous, to 15 mm. diam., subdense. Hyphae substraight to slightly undulate, cells mostly 20—30×5—6 μ, branching usually opposite at wide angles, becoming closely interwoven-reticulate in older colonies. Ch. opposite or alternate, straight or bent, spreading, 11—17 μ long; stc. cylindric, 2—4 μ long; hc. ovate to short cylindric, straight or bent, entire, 8—14 μ long. Mh. mixed with ch., opposite or alternate, ampulliform, 23—30×6—8 μ, neck elongate, often tortuous. Ms. few, scattered, simple, acute, to 1000×10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—51×15—17 μ.

On *Amomis caryophyllata* (= *Pimenta racemosa*), Porto Rico, Stevens 7054, 7483; Sand Domingo, Ciferri 2860 (S).

(297) *Meliola leptospermi* Hansf., Proc. Linn. Soc. N.S.W. 78: 68. 1953.

Cols. amphigenous, subdense, to 2 mm. diam. or confluent.

Hyphae substraight to crooked, cells mostly 15—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or about 2% opposite, straight or bent, 10—16 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to oblong, entire, 7—12×7—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—8 μ. Ms. few, grouped around P., substraight, simple, obtuse to subacute, to 290×7—8 μ. P. closely scattered, verrucose, to 215 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—43×14—16 μ.

On *Leptospermum brachyandrum*, New South Wales, Fraser 189, type; — On *L.* sp., Queensland, Langdon 1602.

(298) *Meliola myrtacearum* Stev. & Rold., Philipp. Journ. Sci. **56**: 73. 1935.

Cols. epiphyllous, thin, effuse. Hyphae undulate, cells mostly 15—25×5—7 μ, branching opposite at wide angles, loosely to rather closely reticulate-interwoven. Ch. alternate or opposite, spreading or slightly antrorse, straight or slightly bent, 10—14 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to ovate, entire, 8—11×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—8 μ. Ms. scattered, straight or slightly flexuous, simple, acute, to 700×8—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—42×16—17 μ.

On *Eugenia* sp., Philippines, Stevens 1946, type (FLS, CUP).

(299) *Meliola eugeniae-monticolae* Hansf., Sydowia Beih. **1**: 107. 1957.

Cols. amphigenous, to 2 mm. diam. or confluent, dense. Hyphae undulate, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—20×6 μ. Ch. alternate or to 2% opposite, more or less antrorse, often bent to flexuous, 14—20 μ long; stc. cylindric, 2—5 μ long; hc. ovate to oblong with rounded apex, often bent, sometimes slightly irregularly angulose-rounded, 10—15×7—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—25×7—8 μ. Ms. scattered thinly and grouped around P., slightly flexuous, simple, obtuse, to 360×7 μ. P. scattered, globose, verrucose ,to 145 μ diam. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 37—43×15—18 μ.

On *Eugenia monticola*, Porto Rico, Stevens 4285, type (FLS).

(300) *Meliola eugeniicola* Stev., Mem. Dept. Agric. India, Bot. Ser. 15: **5**: 107. 1928.

Cols. amphigenous, thin, to 5 mm. diam. Hyphae straight, cells mostly 20—25×7 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite, spreading or subantrorse, straight or slightly bent, 14—18 μ long; stc. cylindric, 3—5 μ long; hc. cylindric or reflexed, entire, 11—14×7—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 13—18×6—8 μ. Ms. few, scattered, straight,

simple, acute, to 1100×8—10 μ. P. scattered, verrucose, to 140 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather deeply constricted, 42—46×21—23 μ.

On *Eugenia eucalyptoides*, India, Subramaniam in IMI 25367, type.

(301) *Meliola eugeniae* Syd., Philipp. Journ. Sci., C. Botany, **21**: 133. 1922.

Cols. amphigenous, dense, to 3 mm. diam. Hyphae substraight to sinuous, cells mostly 12—18×5—6 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 13—17 μ long; stc. cylindric, 2—5 μ long; hc. piriform to cylindric, entire, 10—14×7—10 μ. Mh. few, mixed with ch., alternate, ampulliform, 12—17×6—7 μ. Ms. few, scattered, straight, simple, obtuse, to 280×8 μ. P. scattered, verrucose, to 215 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 50—54×22—23 μ.

On *Eugenia caryophyllata*, Amboina, Robinson 2163, type (IMI).

(302) *Meliola eugeniae-jamboloidis* Hansf., Reinwardtia **3**: 98. 1954.

Cols. hypophyllous, dense, velvety, to 2 mm. diam. Hyphae crooked, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, closely and irregularly interwoven-reticulate. Ch. alternate or scmoreattered, variously bent, 20—31 μ long; stc. clavate or irregularly sinuous-bent and rounded-angulose, 13—21×9—16 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 20—30×7—10 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, simple, obtuse, to 600×8—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 47—54×18—21 μ.

On *Eugenia jamboloides* (= *Syzygium racemosum*), Java, Boedijn in BO 13621, type; — On *E. densiflora* (= S. pyInanthi), Java. Boedijn in BO 12102.

(303) *Meliola eugeniae-calophylloidis* Hansf. & Deighton, Sydowia 10: 71. 1957.

Cols. epiphyllous, thin, to 3 mm. diam. Hyphae straight, cells mostly 18—25×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 18—25 μ long; stc. cylindric, 2—6 μ long; hc. cylindric, entire, 15—20×7—9 μ. Mh. mixed with ch., few, opposite or alternate, conoid to ampulliform, 18—25×7—9 μ. Ms. thinly scattered and grouped around P., not numerous, straight or slightly bent, simple, obtuse, to 200×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 44—49×17—21 μ.

On *Eugenia calophylloides*, Sierra Leone, Deighton 1020, type; — On *Syzygium guineense*, Congo Belge, Hendrickx 3688, with setae to 360 μ and spores 49—54×20—24 μ; — On *Eugenia formosa*, Java, BO 4954; —

? On *Eugenia guaviyu*, Argentina, Jorgensen in SPEG 530; cols. dense, hyphae undulate; ch. 18—27 μ long; hc. oblong-ovate, 13—19×7—9 μ; ms. to 350×7—8 μ, acute or obtuse, often slightly flexuous; sp. 42×18 μ. Little now remains of this specimen, with needs further collection, as it may represent a distinct species.

On *Myrtaceae* indet., Paraguay, Balansa 3601 (= SPEG 577).

(304) *Meliola singaporensis* Hansf., Proc. Linn. Soc. London **157**: 179. 1946.

Cols. rather thin, amphigenous, to 7 mm. diam. Hyphae straight or slightly undulate, cells mostly 15—25×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, subantrorse, mostly straight, 15—25 μ long; stc. cylindric, 2—5 μ long; hc. ovate to cylindric with rounded apex, entire, 11—19×7—9 μ. Mh. mixed with ch., alternate, ampulliform, 17—22×8—9 μ, rarely opposite. Ms. thinly scattered, substraight, simple, obtuse to subacute, to 600×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 43—48×21—25 μ.

On *Eugenia grandis*, Singapore, Baker, Fung. malay. 457, type; — On *E. stahlii*, Porto Rico, Stevens 8665, 8436, 5343; — On *Myrcia deflexa*, Porto Rico, Stevens 8268.

(305) *Meliola eugeniae-jamboloidis* Hansf. var. *paulensis* Hansf., Sydowia **9**: 62. 1955.

Cols. epiphyllous, dense, to 5 mm. diam. or widely confluent. Hyphae substraight, cells mostly 25—30×7—9 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate or less than 1% opposite, antrorse or spreading, straight or bent, 20—28 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. piriform to oblong, entire, 13—20×9—11 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 20—25×7—9 μ. Ms. rather few, scattered and grouped around P., simple, acute, straight, to 600×9—11 μ. Sp. oblong, obtuse, 4-septate, slightly constricted, 42—47×16—17 μ.

On *Myrtaceae* indet., Brazil, Usteri 51 (S).

(306) *Meliola cylindropoda* Doidge, Trans. Roy. Soc. South Africa, 8: 138. 1920.

Cols. amphigenous, mostly hypophyllous, thin, to 6 mm. diam. or confluent. Hyphae straight or slightly undulate, cells mostly 20—27×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, straight or bent, 12—16fμ long; stc. cylindric, 2—5 μ, long; hc. cylindric, straight or sometimes reflexed, entire, 9—13×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, to narrowly conoid, 15—22×6—7 μ. Ms. mostly grouped around P.,

straight or slightly flexuous above, to 500×6—7 μ, simple, obtuse, gradually attenuate upwards. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44× 15—17 μ.

On *Eugenia* sp., South Africa, PRET 1196, 12437, 14943.

(307) *Meliola trichostroma* (Kunze) Toro, Journ. Dept. Agr. Univ. Porto Rico **36**: 62. 1952.

= *Sphaeria trichostroma* Kunze in Weigelt's Exsicc. 1827.
= *Sphaeria trichostroma* Kunze in Weigelt's Exsicc. 1827.
= *Meliola psidii* Fr., Linnaea **5**: 549, 1830.
= *Meliola horrida* Ell. & Ev., Bull. Univ. Iowa 1893, p. 396.

Cols. hypophyllous, subdense, 2—5 mm. diam., velvety, often confluent. Hyphae crooked, branching opposite or irregular at wide angles, closely interwoven-reticulate, cells mostly 20—30×5—7 μ. Ch. alternate, often formed considerably behind the distal septum of the parent cell, straight or irregularly bent, spreading, 15—30 μ long; stc. cylindric, 3—16 μ long; hc. from straight oblong or subglobose, to irregularly bent and rounded-angulose to sublobate, apex often truncate, versiform, 10—18×6—14 μ. Mh. mixed with ch., alternate, ampulliform, 18—30×6—9 μ, neck often elongate, sometimes tortuous. Ms. numerous, scattered, to 400×6—9 μ, gradually attenuate to acute apex, straight or slightly bent, simple. P. closely scattered, slightly verrucose, to 180 μ diam. Sp. subellipsoid with ends from obtuse conoid to broadly rounded, straight or slightly bent, 4-septate, constricted, 35—46×13—17 μ.

On *Psidium pomiferum*, Brazil, Weigelt s. n., type (S), Ule, Herb. brasil. 3122, Ule, Mycoth. brasil. 62 (S); Ecuador, Lagerheim (F); — On *P. araca*, Paraguay, Bertoni 1152 (SPEG); — On *P. guineense*, San Domingo, Ciferri, Mycofl. doming. exs. 317-bis.; - On *Psidium guajava*, Brazil, Ule, Herb. brasil. 1135 (S), Baker, Plants of Amazon 240, Sydow, Fung. exot. exs. 28, Rehm, Ascomyc. 1799, Lindmann B-385 (S), Spruce 616 (K), Weir in USDA 67263; Surinam, Kegel 592 (P); British Guiana, Stevens 483, 723 (FLS), Venezuela, Sydow, Fung. venez. 211, Petrak, Mycoth. gener. 1435, Chardon 2463, 563, Soltero 1469 (CUP); Colombia. Orejuela 1334 (CUP); Panama, Stevens 1140, 813, Standley 26906 (FLS); Costa Rica, Sydow, Fung. exot. exs. 621, Stevens 674, 866, 492 (FLS), Standley 48374 (F); Honduras, Standley 52794 (F); Jamaica, Hansford 477-a, 574, Earle 213, Thaxter 6682, 6672, 7212, 7213, 7248, 7237, 7235, 7337 (F), ;Maxon & Killip 120 (F); Porto Rico, Heller 4360, 6332, Fink 8123 (CUP), Stevens 7721, 6443, 8860, 5642, 5642-a, 7302, 8033, 493, 9377, 3120, 4183, 5841, 8377, 7557 (FLS); San Domingo, Ciferri, Mycofl. doming. exs. 317, Ciferri 2812, 2915, 2896 (S); Trinidad, Stevens

483, 831, 942 (FLS), ICTA 253. Nicaragua, Smith 1, type of *M. horrida* (USDA).

(308) *Meliola ranganathii* Hansf., Proc. Linn. Soc. London, **151**: 185. 1946.

Cols. amphigenous, to 3 mm. diam., numerous and subconfluent. Hyphae substraight to undulate, cells mostly 10—15×6—8 μ, branching close, opposite at wide angles, densely reticulate. Ch. alternate, spreading, straight or bent, 13—22 μ long; stc. cylindric, 4—8 μ long; hc. oblong, rounded at apex, straight or bent, 10—16×7—10). Mh. few, mixed with ch., opposite or alternate, conoid, 14—18×6—9 μ. Ms. few, scattered, simple, acute, straight, to 340×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 35—42×16—19 μ.

On *Eugenia* sp., India, Ranganath in Herb. New Delhi.

(309) *Meliola eucalypti* Stev. & Rold., Philipp. Journ. Sci. **56**: 74. 1935.

Cols. amphigenous, to 14 mm. diam., thin to subdense. Hyphae substraight to undulate, cells mostly 12—25×7—9 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 13—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to cylindric or obtusely conoid, entire, often bent, 12—18×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×8—10 μ. Ms. very few, scattered, simple, acute, straight, to 220×9—10 μ. P. scattered, slightly verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—45×17—19×15—16 μ.

On *Eucalyptus* sp., Philippines, Stevens 1722, (type FLS, CUP).

(310) *Meliola trichostroma* (Kze.) Toro var. **olecranonis** (Stev. & Tehon) Hansf., comb. n.

= Meliola olecranonis Stev. & Tehon, Mycologia **18**: 15. 1926.

Cols. hypophyllous, to 10 mm. diam., dense, subvelvety. Hyphae crooked, branching opposite or irregular at wide angles, closely interwoven-reticulate, cells mostly 15—25×5—6 μ. Ch. alternate, antrorse or spreading, often reflexed-bent, 18—30 μ long; stc. cuneate to cylindric, 3—10 μ long; hc. ovate to clavulate, usually bent, entire, 13—21 ×6—9 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 15—23×6—8 μ. Ms. scattered and grouped around P., straight, simple, gradually attenuate to subacute apex, to 360×6—7.5 μ. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid with the ends obtuse to subacute-conoid, 4-septate, constricted, 33—49×11—14 μ.

On *Psidium guajava*, British Guiana, Stevens 64, type (FLS).

(311) *Meliola malangasensis* Hansf., Sydowia Beih. **1**: 111. 1957.

Cols. epiphyllous, very thin and scarcely visible, to 3 mm. diam. or confluent. Hyphae substraight to finely undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×6—7 μ.

Ch. alternate, spreading or subantrorse, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose to piriform, entire or rounded-angulose, straight or bent, 10—16×8—11 μ. Mh. separate, opposite, ampulliform, 13—18×7—8 μ. Ms. sparse, straight, simple, obtuse to acute, to 360×7.5 μ. P. loosely scattered, verrucose, to 130 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—37×13—15 μ.

On *Eugenia* sp., Philippines, PBS 36335, type (FLS).

(312) *Meliola laxa* Gaill., Bull. Soc. Myc. France 8: 179. 1892.

Cols. amphigenous, to 3 mm. diam. or widely confluent, thin. Hyphae more or less undulate, cells mostly 20—30×7—10 μ branching alternate or irregular, acute, loosely reticulate. Ch. subantrorse, straight or bent, alternate, 18—25 μ long; stc. cylindric, 5—8 μ long; hc. ovate to clavate, entire, 13—18×10—13 μ. Mh. mostly separate in centre of colony, few, opposite or alternate, ampulliform, 16—20×6—8 μ. Ms. very few, grouped around P., straight or somewhat bent, simple, obtuse to subacute, to 280×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—39×14—15 μ.

On *Myrtaceae* indet., Ecuador, Lagerheim in P, type.

(313) *Meliola* sp.

Cols. amphigenous, nearly smooth, to 4 mm. diam., thin. Hyphae straight, branching opposite, acute, regular, loosely reticulate, cells mostly 25—30×6—7 μ. Ch. alternate, straight, subantrorse, 15—20 μ long; stc. cylindric, 3—5 μ long; hc. globose to widely piriform, entire, 11—15×10—13 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 20—25×7—9 μ. Setae few, straight, simple, obtuse, to 300×7—9 μ. P. not seen. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—45×18—20 μ.

On *Eugenia caryophyllata*, Amboina, Robinson 2163 p. p. (IMI 25366-b).

The material is scant and not in good condition, so that it seems to me preferable to await further collections ot this form, which appears to differ from all other known on *Myrtaceae*, before naming this species.

Host Family 119. Lecythidaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3¾03.4220 Cols. thin to dense; hyphae undulate; hc. globose-ovate; ps. obtuse, bent to uncinate .. *gustaviae* (314)

Meliola

3113.4222 Cols. dense, velvety; hyphae straight to flexuous; hc. globose; ms. acute ..... *indica* (315)

3113.4223	Cols. dense, velvety; hyphae flexuous; hc. globose; ms. longer, acute	*indica* var. *careyae* (316)
3113.4223	Cols. dense; hyphae substraight to undulate; hc. subglobose; ms. acute	*barringtoniicola* (317)
3111.3222	Cols. thin; hyphae undulate; hc. subglobose; ms. acute	*napoleonae* (318)

(314) *Irenopsis gustaviae* Hansf., Sydowia Beih. **1**: 93. 1957.

Cols. hypophyllous, thin to dense, to 3 mm. diam. or confluent, when paraditised often much larger. Hyphae substraight to undulate, branching opposite at wide angles, becoming densely reticulate, cells mostly 15—30×7—8 μ. Ch. alternate or opposite in varying proportion, more or less antrorse, usually straight, 15—22 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose, entire or widely ovate, 11—16×10—13 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform, 18—22×7—9 μ. P. few, scattered, globose, to 180 μ diam., with 0—5 suberect setae on upper half; ps. straight below, simple, obtuse, 2—3-septate, to 130×10 μ. attenuate to 4—6 μ at bent to uncinate, apex, surface of upper part coarsely granulose to rough. Sp. oblong, obtuse, 4-septate, constricted, 441—47×16—17×13—14 μ.

On *Gustavia angusta*, British Guiana, Stevens 722 (FLS), type.

(315) *Meliola indica* Syd. apud Syd. & Butl., Ann. Mycol. **9**: 382. 1911.

= *Meliola barringtoniae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 363. 1917.

Cols. amphigenous, velvety, to 6 mm. diam., dense. Hyphae straight or slightly undulate, cells mostly 15—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or about 10% alternate, subantrorse, 10—15 μ long; stc. cylindric, 3—5 μ long; hc. globose, entire, 8—11 μ diam. Mh. few, mixed with ch., opposite, ampulliform, 20—25×8—10 μ. Ms. numerous, straight, simple, acute, to 400×9—12 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—46×15—18 μ.

On *Barringtonia acutangula*, India, Butler 1036, type; Philippines, PBS 29330; — On *B. luzonensis*, Philippines, PBS 29572, 22600, 39476; — On *B. spicata*, Java, BO 2734; — On *B. insignis*, Java, BO 12110; — On *B. racemosa*, Philippines, Petrak, Mycoth, gener. 1950; PBS 36431 (FLS); — On *B.* sp., Philippines, PBS 25335.

(316) *Meliola indica* Syd. var. *careyae* Stev., Ann. Mycol. **26**: 223. 1928.

Cols. epiphyllous, dense, velvety, to 4 mm. diam. or widely confluent. Hyphae substraight to flexuous, cells mostly 25—30×6—8 μ, branching opposite at wide angles, densely interwoven-reticulate. Ch. alternate or to 50% opposite, spreading to subantrorse, usually straight, 15—20 μ long; stc. cylindric, 3—6 μ long; hc. sub-

globose to broadly clavate, entire, 10—14×8—12 μ. Mh. separate, opposite or alternate, ampulliform, 16—20×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 700×9—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—50×14—19 μ.

On *Careya* sp., India, Sedgwick 1985, type (IMI).

(317) *Meliola barringtoniicola* Stev. & Rold., Philipp. Journ. Sci., **56**: 74. 1935.

Cols. epiphyllous, subdense, to 3 mm. diam. Hyphae substraight, to undulate, cells mostly 15—25×6—7 μ, branching opposite, acute, closely interwoven-reticulate. Ch. alternate or to 10% opposite, spreading or antrorse, straight or slichtly bent, 12—20 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose to piriform, entire or slightly rounded-angulose, 10—14×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 19—23×6—8 μ. Ms. scattered, straight, simple, acute, to 550×9—10 μ. P. scattered, slightly verrucose, to 120 μ diam. (? immature). Sp. cylindric, obtuse, 4-septate, constricted, 40—47×16—17 μ, the middle cell often slightly the largest.

On *Barringtonia* sp., Philippines, Stevens 440, type (CUP, FLS).

(318) *Meliola napoleonae* Hansf. & Deight., Mycol. Paper IMI **23**: 10. 1948.

Cols. amphigenous, mostly epiphyllous, to 4 mm. diam., thin. Hyphae slightly undulate, cells mostly 20—30×5—7 μ, branching mostly opposite at wide angles, loosely reticulate. Ch. alternate, closely antrorse, 16—19 μ long; stc. cuneate, 4—7 μ long; hc. globose to widely clavate, 9—13×8—13 μ. Mh. mixed with ch., few, to numerous, opposite or alternate, ampulliform, 15—19×6—9 μ. Ms. mostly grouped around P., sparse to numerous, slightly flexuous, simple, obtuse, to 320×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 25—30×10—13 μ.

On *Napoleona heudelotii*, Sierra Leone, Deighton 1802, (type), 1333.

Host Family 120. Melastomataceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3¾01.4230	Cols. thin to dense; hyphae substraight; hc. globose-piriform, entire; ps. obtuse, coiled or twisted above, smooth	*micaniae*	(319)
3401.4220	Cols. dense; hyphae undulate; hc. larger, subglobose, entire; ps. obtuse, straight or bent at tip, asperate	*shropshiriana*	(320)
3401.4220	Cols. thin; hyphae undulate to crooked; hc. large, angulose; ps. obtuse, smooth or granulose above, substraight	*conostegiae*	(321)
3401.3220	Cols. thin; hyphae substraight; hc. ovatepiriform, entire; ps. obtuse, substraight	*miconiicola*	(322)

(?) 3401.3220	Cols. thin; ps. zo 290 μ, acute or subacute ..	*miconieicola* var. *henrietellae*	(323)
3401.3220	Cols. subdense; hyphae undulate; hc. globose-oblong, entire to subangulose; ps. obtuse, contorted at apex, granulose.....	*clidemiae*	(324)

Asteridiella

3101.4220	Cols. thin; hyphae crooked; hc. ovate or angulose; P-cells conoid-cylindric	*brachycera*	(325)
3101.3220	Cols. thin; hyphae undulate; hc. subglobose to ovate, entire; P-cells rounded to conoid, to 15 μ high	*melastomacearum*	(326)

Meliola

3131.4231	Cols. dense; hyphae straight or flexuous; hc. oblong, entire; ms. acute or dentate	*camaragibeicola*	(327)
3131.4223	Cols. subdense; hc. ovate to cylindric, entire; ms. dentate to 20 μ.....	*disciseta*	(328)
31⅓3.334	Cols. subdense, subvelvety; hc. ovatecylindric, entire; ms. obtuse or dentate	*memecyli*	(329)
31⅓3.5233	Cols. very thin; hyphae substraight; hc. elongate, enire; ms. obtuse or dentate	*affinis*	(330)
31⅓3.4223	Cols. thin; hyphae substraight; hc. oblong, entire; ms. acute or dentate	*heudelotii*	(331)
31⅓3.3223	Cols. dense; hyphae substraight; hc. small, oblong, entire; ms. acute or dentate	*memecyli* var. *microspora*	(332)
3113.4223	Cols. thin; hyphae substraight; hc. small, ovate, entire; ms. obtuse.....	*mouririae*	(333)
3111.4222	Cols. thin, subvelvety; hyphae substraight;		
3111.4222	Cols. thin, subvelvety; hyphae substraight; hc. piriform-ellipsoid or angulose; ms. subacute ..	*oligopoda*	(334)
3111.4221	Cols. subdense; hyphae substraight; hc. ovate; ms. acute	*memecylicola*	(335)
3111.4221	Cols. thin; hyphae substraight to undulate; hc. globose to ovate, larger; ms. obtuse	*dissotidis*	(336)
3111.3222	Cols. thin to subdense; hyphae crooked; hc. ovate to subangulose; ms. obtuse	*medinillae*	(337)
3111.3221	Cols. thin to subdense; hyphae straight to undulate; hc. ovate, entire; ms. obtuse	*dissotidis* var. *minor*	(338)
3111.3221	Cols. thin; hyphae undulate to crooked; hc. ovate, entire; ms. obtuse.....	*inconspicua*	(339)

(319) *Irenopsis miconiae* Stev., Ann. Mycol. 25: 436. 1927.
= *Meliola miconiae* Stev., Illinois Biol. Monogr. 2: 30. 1916.

Cols. epiphyllous, to 5 mm. diam., dense. Hyphae substraight to undulate, cells mostly 15—20×6—7 μ, branching opposite, acute, densely radiating-reticulate and almost solid. Ch. alternate, subantrorse, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to piriform, entire, 11—15×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—8 μ

P. scattered, to 225 μ diam., slightly verrucose; ps. 3—10, straight or slightly bent below, the apex simple, obtuse, twisted, coiled or bent, smooth, continuous, to 85 × 8—9 μ. Sp. oblong, obtuse, 4-septate, constricted, **42—47 × 16—18 μ.**

On *Miconia prasina*, Porto Rico, Stevens 9366, type (FLS), 8160, *Whetzel* 2522 (CUP); — On *M. laevigata*, San Domingo, Ciferri. (320) **Irenopsis shropshiriana** (Stev.) Hansf., comb. nov.

— *Irenina shropshiriana* Stev., Ann. Mycol. **25**: 452. 1927.

Cols. epiphyllous, dense, 1—2 mm. diam., strongly adherent. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 20—25 × 6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 18—22 μ long; stc. cuneate, 3—6 μ long; hc. globose to piriform, entire, 13—17 × 11—14 μ. Mh. mixed with ch., alternate, ampulliform, 18—20 × 7—8 μ. P. scattered, verrucose, to 150 μ diam.; ps. 0—5, straight or bent at the obtuse apex, continuous, brown, asperate above, to 90 × 7—8 μ, wall 1—2 μ thick. Sp. oblong, obtuse, 4-septate, constricted, 35—43 × 15—17 μ.

On *Miconia argentea*, Panama, Stevens 581 (type), 1083, 212, 1005, 1150, 747, 767, 341, 1043, 1008 (FLS); — On *M. actinodendron*, Trinidad, **Baker in IMI 24263.**

(321) *Irenopsis conostegiae* Stev., Ann. Mycol. **25**: 439. 1927.

Cols. epiphyllous, thin, to 10 mm. diam., smooth. Hyphae undulate to crooked, branching opposite or irregular, acute, loosely radiating-reticulate, cells mostly 20—30 × 6—7 μ. Ch. alternate, subantrorse, straight or slightly bent, 20—26 μ oong; stc. cuneate, 3—6 μ long; hc. subglobose to oblong, more or less rounded-angulose, 14—19 × 11—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20 × 7—8 μ. P. scattered, verrucose, to 190 μ diam., surface cells obtusely conoid, to 15 μ high; ps. 0—6, more or less straight, 0—1-septate, brown, obtuse, slightly asperate above when fully mature, to 90 × 7 μ, wall 1—1.5 μ thick. Sp. oblong, obtuse, 4-septate, constricted, **36—41 × 14—16 × 11—24 μ.**

On *Conostegia xalapensis*, Panama, Stevens 216, 215, 1000 (FLS); — On *C. lancolata*, Costa Rica, Sydow, Fung. exot. exs. **616 p. p. (S).**

(322) *Irenopsis miconicicola* Stev., Ann. Mycol. **25**: 436. 1927.

— *Meliola miconicicola* Stev., Illinois Biol. Monogr. **2**: 23. 1916.

Cols. hypophyllous, thin, diffuse, to 20 mm. diam. Hyphae slightly undulate, cells mostly 30—40 × 5—7 μ, branching opposite or irregular, acute, loosely interwoven. Ch. alternate or scattered, distant, antrorse or spreading, usually straight, 20—28 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. ovate to piriform, entire, 14—18 × 7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—25 × 6—7 μ. P. scattered, to 140 μ diam., surface cells rounded to obtusely conoid, projecting to 15 μ; ps. 7—10, arising gfrom near

the base of the perithecial wall, straight or slightly bent, obtuse, simple, to 85×7 μ. Sp. oblong, obtuse, 4-septate, constricted, 34—38× 13—15 μ.

On *Miconia sintensii*, Porto Rico, Stevens 8639, type (FLS).

The origin of the perithecial setae is unusual in the genus, but they are definitely perithecial and not mycelial, not being formed on the mycelial hyphae around the perithecial base.

(323) *Meliola miconieicola* Stey. var. *henrietellae* Cif.", **Mycopathologia 7: 156. 1954.**

Differs from type: Cols. small, from punctiform, 1—1.5 mm. diam., to indefinite and confluent, 2—3 mm. diam.; setae longer, 180—290 μ and thicker, 9—11 μ, acute to subacute, 5—10 to each perithecium; ch. 40—75 μ apart; mycelium 6—10 μ thick.

on *Henrietella fascicularis*, San Domingo, Ekman 4569, type.

Specimens of this variety have not been available to the present author, who suspects that it is not a true *Irenopsis*, but that the long setae are mycelial in origin, placing the form into the genus *Meliola*.

(324) **Irenopsis clidemiae** (Stev.) Hansf., comb. nov.

= *Irenina clidemiae* **Stev., Ann. Mycol. 25: 462. 1957.**

Cols. epiphyllous, to 3 mm. diam., subdense, smooth. Hyphae undulate, branching opposite, acute, closely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, antrorse or spreading, often bent, 14—23 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. globose to clavate-oblong, entire or slightly angulose, often bent, 10—17× 8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. P. scattered, verrucose, to 200 μ diam.; ps. 2—7, straight below, irregularly bent to contorted at apex, obtuse, finely dark-granulose above, to 120×7—8 μ, wall 2—2.5 μ thick, continuous. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—40×13—17 μ.

On *Clidemia* sp., British Guiana, Stevens 254; Trinidad, **Stevens 912 (FLS).**

(325) *Asteridiella brachycera* (Syd.) Hansf., Sydowia **10**: 47. 1957.

= *Meliola brachycera* Syd., Ann. Mycol. **24**: 297. 1926.

= *Irene brachycera* (Syd.) Hansf., Sydowia **9**: 4. 1955.

Cols. thin, to 10 mm. diam., hypophyllous. Hyphae in and below in the leaf tomentum, flexuous to tortuous, cells mostly 25—50× 4—7 μ, branching irregular, acute, loosely reticulate. Ch. alternate or thinly scattered, often formed behind the distal septum of the parent cell, straight or bent, 17—40 μ long; stc. cylindric, often bent, 5—25×5—8 μ; hc. subglobose, ovate or irregularly rounded-angulose, 9—20×9—16 μ. Mh. few, mixed with ch., opposite or unilateral, narrow ampulliform, 25—33×5—8 μ, neck elongate. P. scattered loosely, verrucose, to 200 μ diam., surface cells obtusely conoid or elongate into bent cylindric processes to 30 μ high, the tips obtusely

conoid and the sides often transversely furrowed, dark brown. Sp. bent ellipsoid, obtuse, 4-septate, constricted, 38—45×15—18×15 μ.

On *Conostegia lanceolata*, Costa Rica, Sydow, Fung. exot. exs. 616, Sydow, Fung. costaric. 250, leg. Brenes; both collections show *Irenopsis conostegiae* on upper surface; Sydow, Fung. costaric. 142.

(326) *Asteridiella melastomacearum* (Speg.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola melastomacearum* Speg., Bol. Acad. Nac. Cienc. Cordoba **11**: 495. 1889.

= *Irenina melastomacearum* (Speg.) Stev., Ann. Mycol. **25**: 459. 1927.

= *Irene melastomacearum* (Speg.) Toro, Mycologia **17**: 142. 1925.

Cols. mostly epiphyllous, sometimes caulicolous, to 2 mm. diam., thin. Hyphae sinuous, cells mostly 20—30×5—6 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, antrorse, straight, 15—28 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. subglobose to ovate, rarely slightly angulose or sublobate, 10—19×7—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 15—20×5—8 μ. P. in central group, verrucose, to 170 μ diam., surface cells conoid to mammillate, 10—13 μ high. Sp. oblong, obtuse, 4-septate, constricted, 31—36×12—14 μ μUganda specimens) or 35—40×14—17 μ (American and West African specimens).

On *Melastomataceae* indet., Brazil, Puiggari 2485, type (SPEG); Jamaica, Hansford 570 (K); — On *Dissotis* spp., Uganda, Hansford 1410, 1535, 2339, 2638, 2096, 3037, Dummer 1103; — On *D. cornifolia*, Sierra Leone, Deighton 1329, 2012; — On *Miconia racemosa*, Porto Rico, Stevens 7389, 7145, 7636, 7414, 7399, 7037, Whetzel 388, Chardon 874; — On *Tibouchina longifolia*, Venezuela, Sydowia, Fung. exot. exs. 797, Sydow, Fung. venez. 288; — On *Clidemia strigulosa*, Porto Rico, Stevens 7159, 9423 (FLS); — On *C. neglecta*, Panama, Stevens 1095, 1089 (FLS); — On *C. hirta*, Porto Rico, Chardon 871, Stevens 9479, 7394, 8123, 8956, 8089, 2908, 4079, 4706; Costa Rica, Stevens 686, 828, 820; Ecuador, Stevens 67, 164; Trinidad, Stevens 912, Baker 206, 877; — On *C.* sp., British Guiana, Stevens 144, 761; Costa Rica, Stevens 874; — On *Miconia lacera*, Panama, Stevens 1177, 1034; — On *M.* ? *laevigata*, Porto Rico, Stevens 7149, 7797, 8662, 8085; — On *M. impetiolaris*, Porto Rico, Stevens 2922, 1066; — On *Heterotrichum campanulare*, Ecuador, Stevens 154; — On *H. cymosum*, Porto Rico, Stevens 4359; — On *Pterolepsis glomerata*, Trinidad, ICTA 998; — On *Melastomataceae* indet., Panama, Stevens 1213; Costa Rica, Stevens 523, 682, 658, 522.

(327) *Meliola camaragibeicola* Batista & Maia. Univ. do Recife, Inst. de Micol., Publ. **25**: 6. 1956.

Cols. amphigenous, dense, to 3 mm. diam. Hyphae undulate

to sinuous, branching opposite, acute to wide, closely reticulate, cells mostly 18—24×8—9 μ. Ch. alternate or very rarely opposite, spreading to subantrorse, straight or bent, 18—25 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. subglobose to oblong, entire, 14—19× 9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22×8—10 μ. Ms. mostly grouped around P., straight, to 330× 9—11 μ, apex irregularly dentate-furcate to 18 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—47× 15—18×13—15 μ.

On *Mouriria*, Brazil, Da Silva in IMUR 5601, type.

(328) *Meliola disciseta* Roger, Bull. Soc. Myc. France 52: 80. 1936.

Cols. amphigenous, subdense, to 6 mm. diam. Hyphae sinuous, branching opposite or irregular, at wide angles, closely reticulate, cells 20—30×8 μ. Ch. alternate, straight or bent, 16—26 μ long; stc. 4—10 μ long; hc. oblong, straight or slightly bent, entire, 12—18× 7—10 μ. Mh. very few, often absent, ampulliform, mixed with ch. Ms. grouped around P., straight, to 800×10—12 μ, apex 2—4-dentate to 20 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—50×16—19 μ.

On *Memecylon fasciculare*, West Africa, Roger, type.

The figure is copied from that of Roger in Phytopathologie des Pays Chauds, 2: 1641, 1953.

(329) *Meliola memecyli* Syd., Ann. Mycol. 12: 198. 1914.

Cols. amphigenous, to 5 mm. diam. or confluent, subvelvety, dense. Hyphae substraight, cells mostly 25—30×8—10 μ, branching opposite at wide angles, becoming closely reticulate. Ch. alternate, spreading or antrorse, straight, 18—28 μ long; stc. cylindric, 3—8 μ long; hc. ovate to cylindric, entire, 14—21×9—15 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 17—28×7—10 μ. Ms. numerous, scattered and grouped around P., straight, to 1400× 9—12 μ, apex simple and obtuse, or 2 - 4-dentate to 8 μ. P. scattered, verrucose, to 250 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, 40—54×17—24 μ.

On *Memecylon edulis*, India, Sydow, Fung. exot. exs. 251, type; Thirumalachar s. n.; — On *M. talbotianum*, India, Thirumalachar 870; — On *M. nudum*, Java, BO 12999; — On *M. costatum*, Java, BO 10979; — On *M. lanceolatum*, Philippines, PBS 21920, 23887, 21766 p. p., 23958 p. p., Lee 62, Sydow, Fung. exot. exs. 377 p. p.; — On *M. ovatum*, Philippines, PBS 25844; — On *M.* sp., Philippines, Stevens 1093, p. p. (FLS).

(330) *Meliola affinis* Syd., Leafl. Philipp. Bot. 6: 1921. 1913.

Cols. hypophyllous, very thin, effuse. Hyphae substraight, cells mostly 30—50×6—9 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or more scattered, spreading, straight or bent, 22—30 μ long; stc. cylindric, 6—10 μ long; hc.

oblong to narrow ovate, entire, often bent, 15—25×9—12 μ. Mh. few, mixed with ch., narrow ampulliform, 25—35×7—10 μ, neck elongate. Ms. grouped around P., substraight, 300—750×10—12 μ, simple and obtuse, or usually 2—4-dentate to 10 μ. P. loosely scattered, usually on radiate disc of exhyphopodiate hyphae to 200 μ long, verrucose, to 200 diam., surface cells obtusely conoid. Sp. oblong, obtuse, 4-septate, constricted, 44—51×16—20 μ.

On *Memecylon urdanesense*, Philippines, PBS 14114, type; — On *M. lanceolata*, Philippines, PBS 23958 p. p., 21766 p. p., 23910; — On *M. nudum*, Java, BO 12999 p. p.; — On *M. costatum*, Java, BO 10979 p. p., 5059 p. p.

In most collections this occurs mixed with *M. memecyli*.

(331) *Meliola heudelotii* Gaill., Le Genre *Meliola*, 1892, p. 49. (31⅓3.4223)

= *Irenina heudelotti* (Gaill.) Stev., Ann. Mycol. 25: 459. 1927.

Cols. epiphyllous, thin to dense, to 4 mm. diam., velvety. Hyphae substraight, cells mostly 20—30×6—8 μ, branching opposite, acute, closely reticulate. Ch. alternate or to about 2% opposite, spreading or subantrorse, straight or slightly bent, 15—23 μ long; stc. cylindric, 3—9 μ long; hc. cylindric with rounded apex, entire, straight or slightly bent, 11—18×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 15—25×6—8 μ. Ms. few to fairly numerous, mostly grouped around P., substraight, simple and acute or 2—4-dentate to 12 μ, to 750×9—12 μ. P. loosely scattered, verrucose, to 190 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 41—49×16—20 μ.

On *Memecylon* sp., Senegambia, Heudelot, type in Herb. Paris; Sierra Leone, Deighton 2436.

(332) *Meliola memecyli* Syd. var. *microspora* Hansf., Sydowia 10: 68. 1957.

Cols. mostly epiphyllous, to 2 mm. diam., dense. Hyphae substraight to undulate, cells mostly 12—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or opposite in varying proportions, antrorse or spreading, straight or bent, 13—18 μ long; stc. cylindric, 2—5 μ long; hc. ovate to cylindric, entire, straight or slightly bent, 10—14×7—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×7—9 μ. Ms. mostly around P., straight, simple and acute or 2-dentate to 7 μ, to 700×9—11 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 35—40×14—15 μ.

On *Memecylon* sp., Philippines, Stevens 1777, type (CUP, FLS).

This is mixed with *M. affinis*.

(333) *Meliola mouririae* Cif., Ann. Mycol. 29: 284. 1931.

Cols. epiphyllous, effuse, thin. Hyphae straight, cells mostly

25—30×6—7 μ, branching opposite, acute, loosely interwoven-reticulate. Ch. alternate or to 70% opposite, straight, spreading-antrorse, 14—20 μ long; hc. cylindric to narrowly ovate, entire, 10—14×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×6—8 μ. Ms. scattered, simple, straight, obtuse, to 700×8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid to cylindric, obtuse, 4-septate, constricted, 38—45×14—17 μ.

On *Mouriria domingensis*, San Domingo, Ciferri, Mycofl. doming. exs. 24; Petrak, Mycoth, gener. 1230.

(334) *Meliola oligopoda* Syd., Ann. Mycol. **21**: 89. 1923.

Cols. hypophyllous, rather thin, effuse, slightly velvety. Hyphae substraight, cells mostly 25—40×6—7 μ, branching opposite or irregular, loosely interwoven-reticulate. Ch. few, alternate or thinly scattered, straight or bent, antrorse or spreading, 22—31 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. entire and piriform to narrowly ellipsoid, or angulose and irregular, 14—22×8—13 μ. Mh. mixed with ch., or sometimes separate, mostly alternate, ampulliform, 17—24×6—7 μ, neck elongate. Ms. thinly scattered, straight or slightly flexuous, simple, subacute, to 350×6—8 μ. P. loosely scattered, slightly verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×15—17×13—14 μ.

On *Melastomataceae* indet., Borneo, Ramos 2079, type (S); Elmer 20253 (BO).

(335) *Meliola memecylicola* Hansf., Sydowia **10**: 78. 1957.

Cols. epiphyllous, to 1 mm. diam., subdense. Hyphae substraight, cells mostly 15—25×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 15—20 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. ovate, entire, 12—16×7—9 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 16—20×7—9 μ. Ms. few, mostly grouped around P., straight, simple, acute, to 300×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—41×15—17 μ.

On *Memecylon lanceolatum*, Philippines, PBS 24006 p. p. (PRET, type).

(336) *Meliola dissotidis* Hansf. & Deight., Mycol. Paper, IMI **23**: 11. 1948.

Cols. amphigenous, to 2 mm. diam., thin. Hyphae substraight to slightly undulate, cells mostly 15—35×7—8 μ, branching opposite or alternate, acute or obtuse, loosely radiating-reticulate. Ch. alternate, antrorse, straight, 22—32 μ long; stc. cuneate, 7—12 μ long; hc. subglobose to widely piriform, entire, 14—20×11—13 μ. Mh. separate, few, opposite or alternate, conoid to ampulliform, 15—22×7—9 μ. Ms. few, mostly grouped around P., straight, simple, obtuse, to

280×8—9 μ. P. in central group, verrucose, to 180 μ diam., surface cells obtusely conoid. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 39—47×15—20 μ.

On *Dissotis paucistellata*, Sierra Leone, Dighton 1966, type, 2219, 1868; — On *D. elliotii*, Sierra Leone, Deighton 1770; — On *D. theifolia*, loc. cit., Deighton 1652, 1643; — On *D. capitata*, loc. cit., Deighton 1210, 1440.

(337) *Meliola medinillae* Hansf., Sydowia **9**: 43. 1955.

Cols. hypophyllous, to 10 mm. diam., thin to subdense, slightly velvety. Hyphae crooked, cells mostly 30—40×5—6 μ, branching opposite or irregular, acute, becoming closely reticulate-interwoven in centre. Ch. thinly scattered, alternate or unilateral, usually bent, 20—30 μ long; stc. cylindric, 5—10 μ long; hc. irregularly ovate, often bent, attenuate-rounded at apex or sometimes truncate, 15—20× 9—13 μ. Mh. mixed with ch., mostly in centre of colony, few, opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 400×8—9 μ. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—33×11—13×10—11 μ.

On *Medinilla disparifolia*, Philippines, PBS 9764 (K, type).

(338) *Meliola dissotidis* Hansf. & Deight, var. *minor* Hansf., Sydowia **10**: 70. 1957.

Cols. epiphyllous, thin to subdense, to 2 mm. diam. Hyphae substraight to undulate, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate, spreading or subantrorse, straight or slightly bent, 20—30 μ long; stc. cuneate to cylindric, 5—11 μ long; hc. ovate or rarely subglobose, entire, 14—19×9—12 μ. Mh. separate in entre of colony, opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. grouped around P., simple, obtuse, to 250×7—8 μ. P, scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×13—14 μ.

On *Dissochaeta gracilis*, Java, BO 13510, type.

(339) *Meliola inconspicua* Hansf., Sydowia Beih. **1**: 110. 1957.

Cols. epiphyllous, very thin, to 2 mm. diam. Hyphae undulate to crooked, branching opposite or irregular, acute to wide, loosely radiating-reticulate, cells mostly 20—35×5—6 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 18—30 μ long; stc. cuneate, 5—13 μ long; hc. ovate, rounded or slightly pointed at apex, entire, 14—20×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—30×6—7 μ. Ms. very few, always grouped around P., often none, simple, straight, obtuse, to 140×6—7 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—34×11—14 μ.

On *Melastomataceae* indet., Panama, Stevens 926, type (FLS).

Host Family 121. Combretaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4320	Cols. dense; hyphae flexuous; hc. large, subglobose, entire; mh. separate;	*combreti* var. *major*	(340)
3101.4220	Cols. subdense; hyphae substraight; hc. large, subglobose, entire or angulose; mh. mixed with ch.	*combreti*	(341)
3101.4220	Hyphae straight; hc. smaller, globose to piriform, entire; mh. separate	*cmombreti* var. *leonensis*	(342)
3101.3220	Cols. thin; hyphae substraight; hc. subglobose to angulose	*laguncularíae*	(343)
3101.3220	Cols. thin; hyphae substraight; hc. large, globose	*terminaliae*	(344)

Meliola

3113.4222	Cols. subdense, subvelvety; hc. small, subglobose, entire; ms. acute	*pelliculosa*	(345)
3111.5233	Cols. dense, subvelvety; hc. clavate, entire; ms. obtuse	*buchenaviae*	(346)
3111.4221	Cols. dense, subvelvety; hc. globose, or angulose; ms. flexuous, obtuse	*nigra*	(347)
3111.3221	Cols. dense, velvety; hc. ovate-piriform, entire; ms. straight, obtuse	*sudanensis*	(348)

(340) *Asteridiella combreti* (Stev.) Hansf. var. *major* (Hansf. & Deight.) Hansf., Sydowia **10**: 47. 1957.

= *Irenina combreti* Stev. var. *major* Hansf. & Deight., Mycol. Paper, IMI **23**: 12. 1948.

Cols. amphigenous, dense, to 2 mm. diam. Hyphae flexuous, cells mostly 20—30 × 6—8 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate, 20—28 μ long, antrorse or spreading, straight or bent; stc. cylindric or cuneate, 4—12 μ long; hc. widely clavate to subglobose, entire, 15—19 × 12—16 μ. Mh. separate, sometimes numerous, opposite or alternate, conoid to ampulliform, 15—20 × 6—8 μ. P. in central group, verrucose, to 160 μ diam., surface cells rounded to conoid, projecting to 15 μ. Sp. oblong, obtuse, 4-septate, constricted, 44—48 × 18—21 μ.

On *Combretum velutinum*, Sierra Leone, Deighton 1296, type.

(341) *Asteridiella combreti* (Stev.) Hansf., Sydowia **10**: 47. 1957.

= *Irenina combreti* Stev., Ann. Mycol. **25**: 465. 1927.

Cols. epiphyllous, to 4 mm. diam., dense. Hyphae undulate to crooked, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—30 × 7—8 μ. Ch. alternate, spreading, straight or bent, 19—32 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. from subglobose to irregular, often bent, entire or usually angulose, 16—22 × 11—17 μ. Mh. mixed with ch., opposite or alternate, ampulli-

form, 18—25×7—8 μ. P. scattered, verrucose, to 120 μ diam. (immature). Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×16—18×13 μ.

On *Combretum farinosum*, Panama, Stevens 952 (type), (FLS).

(342) *Asteridiella combreti* (Stev.) Hansf. var. **leonensis** Hansf., var. n.

Ab typo ita differt: Hyphae rectae; hyphopodia capitata recta vel curvata, 18—25 μ longa; cellula apicali subglobosa vel piriformi, integra, 13—18×10—13 μ; hypopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, 13—18×6—8 μ.

In foliis *Combreti platypetri*, Njala, Sierra Leone, Deighton 424 (typus), 424-a, 2357.

Cols. epiphyllous, subdense, to 2 mm. diam. or confluent. Hyphae straight, branching opposite at wide angles, closely reiculate, cells mostly 20—30×7—8.5 μ. Ch. alternate, straight or slightly bent, 18—25 μ long, subantrorse; stc. cuneate, 4—8 μ long; hc. subglobose to piriform, entire, rarely slightly angulose, 13—18×10—13 μ. Mh. separate, opposite or alternate, ampulliform, 13—18×6—8 μ. P. scattered, verrucose, to 140 μ diam., surface cells rounded or obtusely conoid to 12 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—41×16—17 μ.

On *Combretum platypterum*, Sierra Leone, Deighton 424 (type), 424-a, 2357, 2266; — On *C. racemosum*, Sierra Leone, Deighton 1345; — On *C. mucronatum*, Sierra Leone, Deighton 1618; — On *C.* sp., Uganda, Hansford 1874, 2388; Gold Coast, Deighton CB 886, CB 947, Hughes in IMI 43700, 43701, 43699, 43698, 43697- — On *C. extensum*, Java, BO 10990-; — On *Terminalia superba*, Congo Belge, Hendrickx 3713; — On *T.* sp., New Guinea, Womersley in WARI 5412; — On *Quisqualis indica*, Philippines, Stevens 973, (FLS).

(343) *Asteridiella laguncullariae* (Earle) Hansf., Sydowia **10**: 48. 1957.

= *Meliola laguncullariae* Earle, Muhlenbergia **1**: 11. 1901.

= *Irene laguncullariae* (Rarle) Toro, Mycologia **17**: 141. 1925.

= *Amazonia laguncullariae* (Earle) Ryan, Mycologia **18**: 107. 1926.

= *Irenina laguncullariae* (Earle) Stev., Ann. Mycol. **25**: 458. 1927.

Cols. amphigenous, to 5 mm. diam., thin. Hyphae straight to undulate, cells mostly 20—30×5—7 μ, branching opposite or irregular at wide angles, loosely reticulate-interwoven. Ch. alternate, antrorse or spreading, straight or bent, 12—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to narrow piriform, entire or sometimes rounded-angulose, 8—14×6—10 μ. Mh. separate, alternate or poposite,

ampulliform, 13—20×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×13—16 μ.

On *Laguncularia racemosa*, Porto Rico, Heller 4361-a, type (CUP); Stevens 1364, 9231, 7505 p. p., Whetzel 587 p. p., Stevenson 6021, Heller 6417; Panama, Stevens 1050, 1061; Trinidad, ICTA 1902; Sierra Leone, Deighton 1224, 1627; — On *Bucida buceras*, San Domingo, Ciferri, Mycofl. doming. exs. 121-bis, p. p., with ch. somewhat larger and spores 30—38×15—17 μ, subellipsoid; — On *Conocarpus erecta*, San Domingo, Ciferri, Mycofl. doming. exs. 246; Porto Rico, Stevens 9201.

(344) *Asteridiella terminaliae* (Hansf. & Deight.) Hansf., Sydowia **10**: 50. 1957.

(3101.3220)

= *Irenina terminaliae* Hansf. & Deight., Mycol. Paper IMI **23**: 12. 1948.

Cols. epiphyllous, very thin, to 2 mm. diam. or confluent. Hyphae straight, cells mostly 30—40×6—8 μ, branching opposite at wide angles, very loosely reticulate. Ch. alternate, straight or bent, 15—23 μ long; stc. cylindric, 3—7 μ long; hc. globose to piriform, entire, 12—16×10—14 μ. Mh. separate, few, opposite or alternate, conoid to ampulliform, 13—21×6—8 μ. P. scattered, in centre, verrucose, to 160 μ diam., surface cells obtusely conoid to rounded, projecting to about 10 μ. Sp. cylindric, obtuse, 4-septate, constricted, 32—38×12—15 μ.

On *Terminalia ivorensis*, Sierra Leone, Deighton 1862, type, 1686, 2249.

On *T. albida*, Sierra Leone, Deighton 1863, 1909.

(345) *Meliola pelliculosa* Syd., Philipp. Journ. Sci., C. Botany, 8: 480. 1913.

Cols. amphigenous, dense, slightly velvety, minute, often numerous and confluent. Hyphae substraight to slightly undulate, cells mostly 10—15×6—7 μ, branching opposite at wide angles, densely reticulate and nearly solid. Ch. alternate or about 3% opposite, subantrorse, straight, 12—16 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. ovate to narrow piriform, entire, 8—12×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×5—8 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 320×6—7 μ. P. scattered, verrucose, to 150 diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 36—43×15—17 μ.

On *Lumnitzera racemosa*, Philippines, Sydow, Fung. exot. exs. 252, type; Amboina, Robinson 2185; — On *L. littorea*, Borneo, Elmer 20003; — On *Terminalia belerica*, Ceylon, Thwaites 529 (K).

(346) *Meliola buchenaviae* Batista, Ann. IV Congr. Nac. Soc. Bot., Braziil, 1953, p. 102.

Cols. amphigenous, thin, to 3 mm. diam. or confluent. Hyphae

substraight, branching opposite, acute to wide, loosely reticulate. cells 17—30×8—9 μ. Ch. alternate, spreading to subantrorse, straight or slightly bent, 15—20 μ long; stc. cylindric, 3—6 μ long; hc. oblong to piriform, entire, 11—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—24×7—9 μ. Ms. scattered, straight. simple, obtuse, to 870×8—12 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, rather strongly constricted. 4-septate. 40—52×16—19×14—15 μ.

On *Buchenavia capitata*, Brazil. Batista in IMUR 11069, type.

(347) *Meliola nigra* Stev., Illinois Biol. Monogr. 2: 505. 1916.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam. or confluent, dense, subvelvety. Hyphae substraight, cells mostly 12—18× 6—7 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, antrorse or spreading, straight or slightly bent, 12—18 μ long; stc. cuneate, 3—5 μ long; hc. ovoid, piriform, or slightly rounded-angulose, 10—14×8—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—9 μ. Ms. fairly numerous, scattered, substraight to somewhat flexuous, not uncinate, simple, obtuse, to 270×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—41×16—16×12—14 μ.

On *Laguncularia racemosa*, Porto Rico, Stevens 7197 (type). 363, 7505 p. p., Whetzel 587 p. p., Britton & Earle 6491; San Domingo, Ciferri, Mycofl. doming. exs. 121; — On *Bucida buceras*. San Domingo, Ciferri, Mycofl. doming. exs. 121-bis, p. p.

(348) *Meliola sudanensis* Hansf., Sydowia **10**: 91. 1957.

Cols. dense, epiphyllous, velvety, to 3 mm. diam. or confluent. Hyphae substraight to flexuous, cells mostly 20—30×6—7 μ, branching alternate or opposite, acute, closely radiating-reticulate. Ch. alternate, antrorse, straight, 15—20 μ long; stc. cuneate to cylindric. 4—7 μ long; hc. ovate to piriform, entire, 12—16×10—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—30×7—9 μ. neck elongate. Ms. numerous, scattered, straight, simple, obtuse, to 250×7—9 μ. P. closely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, 33—38×13—14 μ.

On *Combretum* sp., Sudan. Tarr 409, (type), 431, 432 (IMI).

Host Family 122. Rhizophoraceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3131.5333 Cols. dense, velvety; hyphae substraight to flexuous; hc. ovate-piriform; ..... *anispohylleae* (349)

3112.4234 Cols. dense, subvelvety; hyphae straight to undulate; hc. ovate-oblong; ms. acute ..... *bruguierae* (350)

(349) *Meliola anisophylleae* Hansf.& Deight., Mycol. Paper. IMI **23**: 13. 1948.

Cols. epiphyllous, rarely also hypophyllous, to 3 mm. diam., dense, velvety. Hyphae substraight to flexuous, cells mostly 15—20 × 8—10 μ, branching opposite or alternate, at wide angles, densely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 25—30 μ long; stc. cylindric, 6—10 μ long; hc. ovate to piriform, straight or bent, 18—23 × 11—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25 × 9—12 μ. Ms. numerous, scattered, straight, to 560 × 9—11 μ, apex 2—3-dentate to 10 μ. P. scattered, verrucose, to 275 μ diam. Sp. oblong, obtuse, 4-septate, 48—57 × 20—24 μ.

On *Anisophyllea laurina*, Sierra Leone, Deighton 934 (type), 1803, 1285, 1288, 1582, 2371.

(350) *Meliola bruguierae* Syd., Leafl. Philipp. Bot., 9: 3116. 1925.

Cols. amphigenous, dense, subvelvety, to 4 mm. diam. Hyphae substraight, to undulate, branching opposite, subrectangular, densely reticulate, cells mostly 12—20 × 5—6 μ. Ch. opposite save where too crowded, antrorse or spreading, variously bent, 13—19 μ long; stc. cylindric, 2—5 μ long; hc. ovate to oblong, bent or straight, entire, 10—14 × 6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 6—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 1200 × 9—10 μ. P. scattered, verrucose, to 210 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 35—41 × 17—20 μ.

On *Bruguiera eriopetala*, Philippines, Elmer 16775, type (FLS); — On *B. gymnorhiza*, India, Griffith (K), differing from the type in wider and straighter hyphae, larger hc., which are straight and globose-piriform 10—16 × 8—12 μ, and in the shorter setae, to 400 × 10—11 μ.

Host Family 123. Hypericaceae.

Synopsis of accepted species of *Meliolineae*:

Asteridiella

3101.5330 Cols. thin; hc. large, angulose to sublobate; P-cells conoid-mammillate, to 30 μ high ..... *harunganae* (351)

3102.3220 Cols. thin; hc. small, globose; P-cells rounded to conoid, to 10 μ high ..... *harunganicola* (352)

Meliola

3113.3221 Cols. very thin; hc. small piriform; ms. obtuse *leonensis* (353)

(351) *Asteridiella harunganae* Hansf., Sydowia **10**: 48. 1957. = *Irenina harunganae* Hansf., Journ. Linn. Soc. London **51**: 568. 1938.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae straight, cells mostly 35—50 × 8—9 μ, branching alternate at wide angles, loosely reticulate. Ch. alternate, subantrorse, straight or bent, 32—36 μ long; stc. cuneate, 10—15 μ long; hc. subglobose, usually rounded-

angulose to sublobate, 21—25×17—21 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Setae none. P. few in central group, verrucose, to 220 μ diam., surface cells conoid to mammillate, to 30 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 50—54×20—23 μ.

On *Harungana madagascariensis*, Uganda, Hansford 2295 (type), 2906, 3236, 3283, 3349, 3614,

(352) *Asteridiella harunganicola* Hansf., Sydowia **10**: 48. 1957.
= *Irenina harunganicola* Hansf., Proc. Linn. Soc. London **157**: 172. 1946.

Cols. epiphyllous, very thin, to 1 mm. diam. Hyphae straight, cells mostly 20—25×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite, spreading-antrorse, straight, 12—16 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to cylindric, entire, 8—12×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. P. scattered, verrucose, to 140 μ diam., surface cells obtusely conoid or merely rounded, to 10 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—40×13—15 μ.

On *Harungana madagascariensis*, Uganda, Hansford 3349, 3614.

(353) *Meliola leonensis* Hansf. & Deight., Mycol. Paper, IMI **23**: 13. 1948.

Cols. epiphyllous, very thin, to 3 mm. diam. Hyphae substright, to slightly flexuous, cells mostly 20—25×4—5 μ, branching opposite at wide angles, very loosely reticulate. Ch. alternate or to 80% opposite, spreading, straight, 12—16 μ long; stc. cylindric, 3—6 μ long; hc. piriform to clavate, entire, 7—11×5—7 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—19×7—8 μ. Ms. few, grouped around P., straight, simple, obtuse, to 260×8 μ. P. scattered, verrucose, to 140 μ diam., surface cells obtusely conoid, to 10 μ high. Sp. oblong, obtuse, 4-septate, constricted, 30—36×11—13 μ.

On *Harungana madagascariensis*, Sierra Leone, Deighton 2004, type.

Host Family 126. Guttiferae.

Synopsis of accepted species of *Meliolineae*:

Appendiculella

3201.5330	Cols. thin; hc. ovoid-piriform to lobate; app. numerous	*calophylli*	(354)

Asteridiella

3101.5220	Cols. thin; hyphae substraight; hc. ovate to angulose	*symphoniae*	(355)
3101.4320	Cols. thin; hyphae substraight; hc. oblong, entire	*galipanensis*	(356)
3101.43×0	Cols. dense; hyphae substraight to undulate; hc. piriform to sublobate	*vismiae*	(357)

3101.42×0	Cols. thin to subdense; hyphae substraight; hc. oblong, entire	*vismiicola*	(358)

Meliola

3113.5223	Cols. dense, velvety; hyphae substraight; hc. ovate-oblong; ms. obtuse	*mammeicola*	(359)
3111.6233	Cols. dense; hyphae substraight; hc. ovoid to angulose; ms. obtuse	*clusiae*	(360)
3111.5334	Cols. dense, velvety; hyphae substraight; hc. oblong, entire; ms. obtuse to acute	*garciniae*	(361)
3111.5234	Cols. dense, velvety; hyphae straight; hc. oblong, entire; ms. obtuse	*mammeae*	(362)
3111.4233	Cols. thin; hyphae straight; hc. cylindric, entire; ms. obtuse	*garciniae* var. *mangostana*	(363)

(354) *Appendiculella calophylli* (Stev.) Toro, Mycologia **17**: 144. 1925.

= *Meliola calophylli* Stev., Illinois Biol. Monogr. 2: 22. 1916.

= *Irene calophylli* Stev., Ann. Mycol. **25**: 428. 1927.

Cols. mostly epiphyllous, thin, to 10 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×6—8 μ, branching irregular at wide angles, loosely reticulate. Ch. alternate, spreading, usually irregularly bent, 28—40 μ long; stc. cylindric, 7—19 μ long; hc. ovoid to piriform, usually irregularly sinuous-lobate and curved, versiform, 16—22×11—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—24×7—10 μ. P. scattered, globose, to 220 μ diam.; app. numerous, curved, obtuse, transversely striate, 30—51×12—17 μ, apex somewhat translucent. Sp. oblong to subellipsoid, obtuse, 4-septate, deeply constricted, 44—51×17—21 μ.

On *Calophyllum calaba*, Porto Rico, Stevens 7059 (type). 7489-a, 4310 p. p. (FLS, S, F).

(355) *Asteridiella symphoniae* Hansf., Sydowia **10**: 50. 1957.

= *Irenina symphoniae* Hansf., Proc. Linn. Soc. London **160**: 120. 1948.

Cols. epiphyllous, thin, to 8 mm. diam. Hyphae substraight to flexuous, cells mostly 20—35×7—9 μ, branching alternate or opposite, acute, loosely reticulate. Ch. alternate, subantrorse, straight or bent, 20—35 μ long; stc. cuneate, 7—15 μ long; hc. ovate, clavate or slightly rounded-angulose, 13—20×12—16 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—51×13—18 μ.

On *Symphonia gabunensis*, Uganda, Hansford 2581, type; — On *S. globulifera*, San Thome, 1885, Moller (previously reported by Bresadola (1891) as *Meliola velutina*; — ? On *Rheedia dulcis*, Costa Rica, Tonduz in SPEG 607 sub *M. glabroides*; very close to the above, but no P. or sp. were present in my mounts; hc. globose to piriform, entire, 11—18×10—14 μ.

(356) *Asteridiella galipanensis* (Toro) Hansf.. Sydowia **10**: 48. 1957.

= *Irenina galipanensis* Toro in herb. (? ined).

Cols. hypophyllous, to 10 mm. diam. or confluent, thin, smooth. Hyphae substraight. cells mostly 25—35×5—6 μ, branching opposite, acute, loosely radiating-reticulate and interwoven. Ch. alternate, antrorse or spreading, straight or flexuous, 18—25 μ long; stc. cylindric, 4—7 μ long; hc. oblong, clavate or ellipsoid, entire. straight or bent, 13—18×6—8 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—25×6—8 μ. P. loosely scattered, slightly verrucose, to 140 μ diam., surface cells obtuselly conoid. to 16 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—46×18—21 μ.

On *Guttiferae* indet., Caracas, Venezuela, Kern & Toro 1696, type (CUP).

(357) *Asteridiella vismiae* Hansf., Sydowia **11**: 50. 1958.

Cols. epiphyllous, dense, smooth, to 1 mm. diam. Hyphae substraight to undulate, closely reticulate, branching opposite at wide angles, cells mostly 20—30×6—7 μ. Ch. alternate, usually irregularly bent, antrorse or spreading, 22—30 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. piriform to irregularly angulose or sublobate, often bent, versiform, 16—23×11—17 μ. Mh. not seen. P. scatterred, globose, verrucose, glabrous, immature. Sp. ellipsoid, obtuse, 4-sptate, constricted, 45—48×21—22 μ.

On *Vismia latifolia*, British Guiana, Stevens 299 p. p. (FLS).

(358) *Asteridiella vismiicola* Hansf.. Sydowia **11**: 50. 1958. (3101.42×0)

Cols. epiphyllous, thin to subdense, to 2 mm. diam. Hyphae substraight to slightly undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, spreading or subantrorse, straight or slightly bent, 13—17 μ long; wtc. cylindric to cuneate, 3—5 μ long; hc. oblong to clavulate, entire, 10—13×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform. 18—22×6 μ, neck elongate. P. scattered, globose, glabrous, verrucose, immature. Sp. oblong, obtuse, 4-septate, constricted, 37—44×14—15 μ.

On *Vismia latifolia*, British Guiana, Stevens 299 p. p. (FLS).

(359) *Meliola mammeicola* Hansf., Recueil I.N.E.A.C. **2**: 40. 1945.

Cols. epiphyllous, to 8 mm. diam., dense, velvety. Hyphae straight to slightly undulate, cells mostly 20—40×7—9 μ, branching opposite, acute, densely reticulate. Ch. alternate or about 4% opposite. spreading, straight, 19—24 μ long; stc. cylindric, 4—8 μ long; hc. ovate to cylindric, 12—20×10—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 20—28×10 μ, neck elongate. Ms. numerous, scattered and grouped around P., straight, simple. obtuse, to 900×10—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 45—57×14—20 μ.

On *Mammea africana*, Congo Belge, Hendrickx 2388, type.

(360) *Meliola clusiae* Stev., Illinois Biol. Monogr. 2: 52. 1916. (3111.6233)

= *Amazonia clusiae* Stev., Ann. Mycol. 25: 415. 1927.

Cols. hypophyllous, dense, to 5 mm. diam. Hyphae substraight, cells mostly 20—30×8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or variously bent, subantrorse or spreading, 20—27 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. ovoid to cylindric, usually irregularly angulose, 13—19×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—27×8—10 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 800×10—13 μ. P. finally globose, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 54—62×16—20 μ.

On *Clusia minor*, Porto Rico, Stevens 8283 (type), 8571 (FLS); — On *C. gundlachii*, Porto Rico, Stevens 8670; — On *C.* sp., Surinam, Kappler in BURX ex Ghuemen.

(361) *Meliola garciniae* Yates, Philipp. Journ. Sci., C. Botany, **13**: 369. 1918. (3111.5334)

= *Meliola kydia* Sacc., Bull. Ort. Bot. Napoli 6: 13. 1921.

Cols. epiphyllous, dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading, mostly straight, 20—27 μ long; stc. cylindric, 5—8 μ long; hc. oblong to piriform, entire, 15—20×10—14)μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 25—28×8—10 μ, neck elongate. Ms. numerous, scattered, straight, simple, obtuse to acute, to 1100×10—13 μ. P. scattered, verrucose, to 280 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 46—57×19—23 μ.

On *Garcinia* sp., Philippines, PBS 27795, type; — On *G. kydia*, Singapore, Baker, Fung. malay 450 (type of *M. kydia*); — On *G. epunctata*, Cameroons, Zenker 3036; Sierra Leone, Small in IMI 53147; — On *G. densivenia*, Cameroons, Zenker 2397; — On *Pentadesma butyracea*, Sierra Leone, Deighton 1578, 1848, 1858; — On *Garcinia mangostana*, Malaya, Johnston 477 (IMI 41010).

(362) *Meliola mammeae* Hansf., Proc. Linn. Soc. London **157**: 178. 1946.

Cols. amphigenous, dense, velvety, to 10 mm. diam. Hyphae straight, cells mostly 25—30×8—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight, spreading or subantrorse, 20—32 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. oblong to ovate, entire, 15—22×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—25×8—10), neck elongate. Ms. numerous, scattered and grouped around P., straight, simple, obtuse, to 1200×

8—11 μ. P. loosely scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, deeply constricted, 45—53×17—20×13—15 μ.

On *Mammea americana*. San Domingo, Ciferri. Mycofl. doming. exs. 169, type, Ciferri 2796 (S); Porto Rico, Stevens 8207, 3641 (FLS).

(363) *Meliola garciniae* Yates var. *mangostana* (Sacc.) Hansf., Proc. Linn. Soc. London **160**: 120. 1948.

= *Meliola mangostana* Sacc., Bull. Ort. Bot. Napoli **6**: 42. 1921;

= *Irenina mangostana* (Sacc.) Stev., Ann. Mycol. Berlin **25**: 457. 1927.

Cols. epiphyllous, thin, diffuse. Hyphae straight, cells mostly 20—35×8—9 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading, straight, 18—25 μ long; stc. cylindric or cuneate, 5—8 μ long; hc. cylindric, entire, 14—19×8—12 μ. Mh. few, mixed with ch., alternate, ampulliform, 22—28×8—10 μ. Ms. fairly numerous, scattered, simple, straight, obtuse, to 800—9×11 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—50×17—20 μ, the middle cell often slightly the largest.

On *Garcinia mangostana*, Singapore, Baker, Fung. malay. 453.

Host Family 127. Scytopetalaceae.

(364) *Meliola scytopetali* Hansf. & Deight., Mycol. Paper, IMI **23**: 14. 1948.

Cols. epiphyllous, rarely hypophyllous, to 1.5 mm. diam., dense, subcrustose. Hyphae substraight, cells mostly 15—20×7—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or bent, 15—25 μ long; stc. cuneate, 3—10 μ long; hc. subglobose, entire, 13—18×12—15 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 16—20×7—9 μ. Ms. grouped around P., substraight, simple, obtuse, to 180×7—9 μ. P. in close central group, each surrounded by a radiate subiculum of hyphae to 60 μ long, from which the setae arise, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45×13—17 μ.

On *Scytopetalum tieghemii*, Sierra Leone, Deighton 957-a, 957-b.

Host Family 128. Tiliaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4330	Cols. thin; hyphae substraight; hc. subglobose, entire or angulose; ps. substraight, obtuse, smooth, to 80 μ	*coronata*	(365)
3401.4220	Cols. thin; hyphae substraight; hc. piriform, entire; ps. straight, smooth, to 130 μ	*coronata* var. *philippinensis*	(366)

3¾01.3220	Cols. thin to dense; hyphae substraight to flexuous; hc. subglobose, entire; ps. straight or uncinate, obtuse, to 110 μ	*coronata* var. *christianae*	(367)
3301.4230	Cols. thin to subdense; hyphae undulate to crooked; hc. globose, entire; ps. obtuse, straight or uncinate, dark granulose, to 120 μ	*triumfettae*	(368)
3¾01.4230	Cols. thin; hyphae crooked; hc. subglobose, entire or angulose; ps. to 120 μ, straight or tortuous above, asperate at apex, obtuse	*triumfettae* var. *glyphaeicola*	(369)
3301.4230	Cols. thin; hyphae undulate; hc. subglobose, angulose; ps. to 120 μ, uncinate to coiled at swollen, obtuse, asperate apex	*triumfettae* var. *vanderystii*	(370)
3301.3220	Cols. thin; hyphae crooked; hc. globose, entire or angulose; ps. to 100 μ, coiled at asperulate apex	*lagunae*	(371)

Asteridiella

3101.6320	Cols. thin to subdense; hyphae substraight to crooked; hc. oblong to clavate, entire to sublobate; P-cells bent conoid to 35 μ high	*elaeocarpicola*	(371)
3101.5330	Cols. dense; hyphae substraight; hc. large, lobate; P-cells conoid, to 30 μ	*glyphaeae*	(372)
3102.4220	Cols. dense; hyphae straight; hc. conoid; P-cells rounded	*amoena*	(373)

Meliola

3112.4221	Cols. dense; hyphae straight; hc. subglobose, entire; ms. acute or obtuse	*elaeocarpi*	(374)
3111.4223	Cols. thin to subdense; hyphae substraight; hc. subglobose, entire; ms. acute	*grewoocola*	(375)
3111.3221	Cols. thin; hyphae substraight; hc. ovate, ms obtuse	*grewiae*	(376)

(365) *Irenopsis coronata* (Speg.) Stev., Ann. Mycol. 25: 435. 1927.
Meliola coronata Speg., Fung. Guar. Pug. I: no. 175, in Anal. Soc. Cienc. Argentina 18, 1884.

Cols. epiphyllous, thin, to 4 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 28—43 × 5—8 μ, branching opposite or alternate at wide angles, loosely reticulate. Ch. alternate, more or less antrorse, 18—26 μ long; stc. 5—12 μ long, often antrorse-bent; hc. subglobose and entire to slightly rounded-angulose, bent or straight, 10—17 × 10—17 μ. Mh. mixed with ch., opposite or alternate, 15 - 22 × 6—9 μ. P. scattered, verrucose, to 240 μ diam.; ps. 2—5, substraight, simple, obtuse, smooth or very faintly asperulate above, continuous or 1-septate near base, attenuate upwards, wall about 1 μ thick. Sp. ellipsoid, obtuse, 4-septate, 37 - 47 × 19—21 × 16—15 μ.

On *Luehea divaricata*, Paraguay, Balansa 3847, type (K, P, SPEG, FLS); Ro7m., Fung. gall. exs. 3223 (F); Argentina, SPEG 509.

(366) *Irenopsis coronata* (Speg.) Stev. var. *philippinensis* Stev. & Rold., Philipp. Journ. Sci. **56**: 50. 1935.

Cols. minute, epiphyllous, thin, scarcely visible. Hyphae substraight, cells mostly 30—40×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, subantrorse, usually straight. 18—24 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose to piriform, entire, 13—17×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—8 μ. P. scattered, slightly verrucose, to 200 μ diam., ps. 3—8, erect-spreading from upper half of perithecium, substraight or slightly bent near apex, not uncinate, smooth, continuous, to 130×8 μ. Sp. subelliosoid, obtuse, 4-septate, constricted, 38—44×17—19 μ.

On *Columbia serratifolia*, Philippines, Stevens 510, type (FLS, CUP).

(367) *Irenopsis coronata* (Speg.) Stev. var. *christianae* (Deight) Hansf. & Deight., Mycol. Paper, IMI **23**: 15. 1948.

= *Meliola coronata* Speg. var. *christianae* Deight., l. c. **9**: 16. 1944.

Cols. epiphyllous, thin to subdense, to 5 mm. diam. or confluent. Hyphae substraight to flexuous, cells mostly 20—30×5—7 μ, branching opposite or irregular, acute, loosely reticulate, becoming closer in old colonies. Ch. alternate, subantrorse, usually straight, 16—22 μ long; stc. cylindric or cuneate, 3—7 μ long; hc. globose, entire, rarely slightly angulose, 11—16×10—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×6—8 μ. P. scattered, to 170 μ diam., verrucose; ps. 5—15, erect-spreading, straight or flexuous to uncinate above, smooth or faintly asperulate above, obtuse, to 130×6—7 μ, tapering to about 4 μ at apex, wall 1—2 μ thick, pale brown. Sp. cylindric, obtuse, 4-septate, constricted, 31—39×13—15×10—11 μ.

On *Christiana africana*, Sierra Leone, Deighton 1341 (type), 539, 1758; Gold Coast, Hughes in IMI 44542.

(368) *Irenopsis triumfettae* (Stev.) Hansf. & Deight., Mycol. Paper, IMI, **23**: 14. 1948.

= *Meliola triumfettae* Stev., Illinois Biol. Monogr. **2**: 30. 1916.

= *Irenopsis coronata* (Speg.) Stev. var. *triumfettae* Stev., Ann. Mycol. **25**: 435. 1927.

Cols. epiphyllous, subdense, to 3 mm. diam. Hyphae crooked, cells mostly 20—30×6—8 μ, branching opposite or irregular, at wide angles, closely reticulate. Ch. alternate, straight or bent, more or less antrorse, 12—18 μ long; stc. cylindric to cuneate, straight or bent, 2—6 μ long; hc. globose to piriform, entire, 10—14×9—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23×7—8 μ, neck elongate. P. in close central group, verrucose or almost smooth, to 190 μ diam.; ps. 1—6, erect-spreading, continuous, straight or somewhat flexuous below, bent to uncinate at obtuse apex, to 120×6—8 μ, wall 1—2 μ thick, the upper part with scattered dark surface

granules. Sp. subellipsoid. obtuse. 4-septate. constricted. 33—43× 16—18×14 μ.

On *Triumfetta semitriloba*, Porto Rico, Stevens 3482. 4421 (type), Whetzel 2556; — On *T. bartramia*, Java, BO 14436; — On *T. lappula*. Trinidad. ICTA 406. 1113; — On *T.* sp., Porto Rico. Stevens 5481. 7863. Whetzel 2629; — On *Schoutenia ovata*, Java. BO 10947; — On *Luehea speciosa*, Panama, Stevens 626; — On *Tiliaceae* indet., Jamaica, Hansford 809.

(369) *Irenopsis triumfettae* (Stev.) Hansf. & Deight., var *glyphaeicola* (Deight.) Hansf. & Deight., Mycol. Paper, IMI **23**: 15. 1948.

= *Meliola triumfettae* Stev. var. *glyphaeicola* Deight., l. c., **9**: 20. 1944.

Cols. amphigenous, to 2 mm. diam., thin, sometimes confluent. Hyphae crooked, cells mostly 15—23×5—8 μ, branching alternate or opposite at wide angles, loosely reticulate. Ch. alternate, straight or bent, more or less antrorse, 17—26 μ long; stc. cylindric or cuneate, 6—10 μ long; hc. subglobose, ovboate or slightly rounded-angulose, straight or bent, 11—15×12—17 μ. Mh. numerous, mixed with ch., alternate or opposite, ampulliform, 17—22×6—8 μ. P. scattered, verrucose, to 240 μ diam., ps. up to 12, brown, tortuous above, obtuse, continuous or 1—2-septate, to 120×6—7 μ, swollen to 8—10 μ above and often slightly asperate, wall 1—2 μ thick below, 4—5 μ near apex. Sp. oblong, obtuse, 4-septate, constricted, 40—46×16—19×11—15 μ.

On *Glyphaea* lateriflora, Uganda, Hansford 1851 (type); Sierra Leone, Deighton 1734; Gold Coast, Deighton CB 746; Hughes in IMI 41751, 41753.

(370) *Irenopsis triumfettae* (Stev.) Hansf. & Deight. var. *vanderystii* (Beeli) Hansf. & Deight., Mycol. Paper, IMI **23**: 14. 1948.

(3301.4230)

= *Meliola triumfettae* Stev. var. *vanderystii* Beeli, Bull. Jard. Bot. Bruxelles **7**: 100. 1920.

= *Irenopsis coronata* (Speg.) Stev. var. *vanderystii* (Beeli) Stev., Ann. Mycol. **25**: 436. 1927.

Cols. epiphyllous, to 2 mm. diam., thin. Hyphae undulate, cells 15—37×5—8 μ, branching opposite or irregular, at wide angles, loosely reticulate. Ch. alternate, antrorse, usually straight, mostly 15—22 μ long; stc. cylindric or cuneate, mostly 4—8 μ long; hc. subglobose, entire, rounded-angulose or sublobate, 11—16×10—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—22×6—8 μ. P. scattered, verrucose, to 210 μ diam.; ps. 2—7, erect-steading, curved, uncinate or tortuous at apex, continuous, to 120×6—8 μ, swollen to 7—10 μ near apex, coarsely asperate above, wall thickened to 2—3 μ in most of lenght, dark brown, obtuse. Sp. cylindric, obtuse, 4-septate, constricted, 33—43×13—16×11—12 μ.

On *Triumfetta* sp., Congo Belge. Vanderyst 2745, type (BRUX): Gold. Coast. Hughes in IMI 39873. 39875; — On *T. rhomboidea*, Sierra Leone, Deighton 1770-a, 1473, 1269-a, 1270-a, 1271-a, 1272-a, 1272-a, 1916-a, 2212-b; Gold Coast, Deighton CB 763; — On *T. cordifolia*, Sierra Leone, Deighton 1090, 1350, 1565; — On *T. pentandra*, Sierra Leone, Deighton 1268-a; — On *T. bartramia*, Philippines, Sydow, Fung. exot. exs. 367. Stevens 691; — On *T. semitriloba*, Philippines, Sydow Fung. exot. exs. 368.

(371) *Irenopsis lagunae* Hansf., Proc. Linn. Soc. London 157: 168. 1945.

Cols. epiphyllous, thin, to 1 mm. diam. Hyphae undulate to crooked, cells mostly 20–30×6–7 μ, branching irregular at wide angles, loosely reticulate. Ch. alternate, straight or slightly bent, 13–18 μ long; stc. cylindric to cuneate, 2–5 μ long; hc. subglobose, entire or slightly rounded-angulose, 10–12 μ diam. Mh. mixed with ch., alternate or opposite, ampulliform to conoid, 15–22×6–8 μ. P. scattered or in central group, verrucose, to 140 μ diam.; ps. 2–5, erect-spreading, straight below, more or less tightly coiled and finely asperulate at obtuse, apex to 100×6–8 μ, continuous, thin-walled, brown. Sp. subellipsoid, obtuse, 4-septate, constricted, 36–39× 12–15 μ.

On *Triumfetta semitriloba*, Philippines, Baker, Fung. malay 248, type, Baker 485, 2844, 4018 (S).

(371-a) **Asteridiella elaeocarpicola** Hansf., sp. n.

Plagulae amphigenae, tenues vel subdensae, leves, usque ad 3 mm. diam. vel confluentes. Hyphae brunneae, in epiphyllo subrectae vel flexuosae, opposite vel irregulariter lateque ramosae, laxe vel dense reticulatae, cellulis plerumque 20–30×7–9 μ. Hyphopodia capitata alternate, aptentia, recta vel curvata, 19–27 μ longa; cellula basali cuneata vel cylindracea, 5–9 μ longa; cellula apicali oblonga, piriformi vel clavata, integra, angulosa vel sublobata, saepe curvata, 14–21×11–15 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel raro opposita, ampullacea, 17–22×7–8 μ. Perithecia laxe dispersa, atra, globosa, rugosa, usque ad 200 μ diam.; cellulis externis conoideis, obtusis vel truncatis, saepius curvatis, usque ad 35 μ alt. Sporae atrobrunneae, oblongae, obtusae, 4-septatae, constrictae, 53–63×20–26×15–19 μ.

Hab. in foliis *Elaeocarpi monoceratis*, Catenduanes, Philippines, Ramos in PBS 30596 (typus in USDA).

Hypophyllous colonies show the mycelial hyphae more crooked, with irregular branching; the head cells are more irregular and there is a much higher proportion of mucronate hypopodia.

(372) *Asteridiella glyphaeae* Hansf., Sydowia **10**: 48. 1957.

= *Irenina glyphaeae* Hansf., Proc. Linn. Soc. London **153**: 9. 1941.

Cols. epiphyllous, to 3 mm. diam., dense, strongly parasitic and causing a small dark leafspot, showing through the leaf on the lower surface. Hyphae slightly undulate, cells mostly 20—39 × 7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, usually straight, antrorse, 26—35 μ long; ste. cuneate, 7—17 μ long; hc. irregularly rounded-angulose to lobate, 16—25 × 15—20 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 18—25 × 7—9 μ. P. in central group or scattered, verrucose, to 220 μ diam., surface cells conoid to mammillate, to 30 μ high. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 45—51 × 17—21 μ.

On *Glyphaea grewioides*, Uganda, Hansford 2413, type.

(373) *Asteridiella amoena* (Syd.) Hansf., Sydowia **10**: 46. 1957.
= *Irene amoena* Syd., Ann. Mycol. **24**: 315. 1926.
= *Irenina amoena* (Syd.) Stev., l. c., **25**: 451. 1927.

Cols. amphigenous, dense, to 1 mm. diam. Hyphae straight, cells mostly 12—16 × 6 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, straight or slightly recurved at apex, 9—13 μ long; ste. cylindric, 2—4 μ long; hc. conoid, straight, or the rounded apex slightly bent, 7—10 × 5—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20 × 6—8 μ, neck elongate. P. scattered, verrucose, to 160 μ diam.; surface cells rounded, only slightly projecting. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 35—41 × 15—16 μ.

On *Sloanea faginea*, Costa Rica, Sydow, Fung. costaric. 162, type.

(374) *Meliola elaeocarpi* Yates, Philipp. Journ. Sci., C. Botany, **12**: 365. 1917.

Cols. amphigenous, to 6 mm. diam. or confluent, dense. Hyphae straight, cells mostly 15—25 × 6—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite save where crowded, antrorse-spreading, straight, 12—16 μ long; ste. cylindric, 3—5 μ long; hc. subglobose to ovoid, entire, 9—12 × 8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20 × 6—10 μ. Ms. numerous, scattered, straight, simple, acute or obtuse, to 300 × 8—10 μ. P. scattered, verrucose, to 140 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 44—50 × 18—10 μ.

On *Elaeocarpus* sp., Philippines, PBS 25175, type.

(375) *Meliola grewiicola* Hansf., Sydowia **11**: 56. 1958.

(3111.4223)

Cols. amphigenous, thin to subdense, subvelvety, to 3 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 25—30 × 6—8 μ. Ch. alternate, spreading or subantrorse, straight or slightly bent, 22—35 μ long; ste. cuneate, 5—15 μ long; hc. subglobose to ovate, entire, 15—22 × 11—17 μ. Mh. rare, mixed with ch., alternate, ampulliform, 16—24 × 7—8 μ, neck elongate. Ms.

scattered and grouped around P., straight, simple, acute, to 900× 10—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 41—48×16—19×11—13 μ.

On *Grewia* sp., Philippines, Stevens 496-a, type (FLS).

(367) *Meliola grewiae* Hansf., Sydowia **10**: 74. 1957.

Cols. hypophyllous, thin, effuse, to 10 mm. diam. or widely confluent. Hyphae substraight, opposite-branched at acute angles, loosely radiating-reticulate, cells mostly 30—40×4—6 μ. Ch. alternate, antrorse or spreading, substraight, 16—22 μ long; stc. cylindric, 3—8 μ long; hc. ovate to cylindric, entire or sometimes slightly angulose, 12—16×8—9 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 18—17×6—8 μ, neck elongate. Ms. mostly grouped around P., few, substraight, simple, obtuse, to 290×7 μ. P. loosely scattered, verrucose, to 150 μ diam., glabrous. Sp. cylindric, obtuse, 4-septate, constricted, 29—36×11—13 μ.

On *Grewia stylocarpa*, Philippines PBS 2937, type (S).

Host Family 130. Sterculiaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

3201.4220	Cols. thin; hyphae crooked; hc. subglobose; app. uncinate, obtuse, to 160 μ long	*dombeyae*	(377)

Irenopsis

3401.5320	Cols. dense; hyphae substraight; hc. globose; ps. straight, obtuse, to 200 μ	*media*	(378)
3401.3220	Cols. thin; hyphae substraight; hc. globose; ps. straight, obtuse, to 120 μ	*tjibodense*	(379)
3401.4220	Cols. subdense; hyphae straight to unculate; hc. ovate to clavate or sublobate; ps. slightly flexuous, to 105 μ	*nesogordoniae*	(379)
3301.6330	Cols. dense, crustose; hyphae substraight to sinuous; hc. subglobose; ps. uncinate, obtuse, to 160 μ	*njalaensis*	(380)
3301.5330	Cols. dense; hyphae crooked; hc. subglobose to angulose; ps. uncinate, obtuse, to 160 μ	*tarrietiae*	(381)
3301.5320	Cols. subdense; hyphae substraight to sinuous; hc. subglobose, entire; ps. tortuous to hamate above, obtuse, to 95 μ	*aburiensis*	(381a)
3301.5230	Cols. subdense; hyphae crooked; hc. ovoid to angulose; ps. bent to coiled above, to 85 μ	*guianensis*	(382)
3301.4330	Cols. subdense; hyphae undulate; hc. entire to lobate; ps. uncinate, to 120 μ	*coliicola*	(383)
3¾01.4230	Cols. subdense; hyphae substraight; hc. subglobose to sublobate; ps. straight or uncinate, obtuse, —110 μ	*buettneriicola*	(384)
3301.4220	Cols. thin to subdense; hyphae undulate to crooked; hc. globose; ps. obtuse, bent to uncinate, —120 μ	*triumfettae*	(385)
3301.4220	Cols. thin; hyphae straight to undulate; hc. subglobose; ps. obtuse, flexuous to uncinate, —220 μ	*colae*	(386)

3301.4220	Cols. dense; hyphae straight; hc. subglobose or angulose; ps. curved to tortuous at apex, obtuse, granulose, to 95 μ	*leptonychiae*	(386)
3301.3220	Cols. dense; hyphae straight to undulate; hc. piriform; ps. obtuse, twisted or contorted at apex, −140 μ	*curvata*	(387)
Aste-idiella			
3101.4220	Cols. dense; hyphae substraight; hc. ovate to sublobate	*buettneriae*	(388)
Meliola			
3133.4221	Cols. thin to dense; hyphae substraight to flexuous; hc. subglobose, entire	*sterculiae*	(389)
31 1/3 3.3222	Cols. thin to subdense; hyphae substraight to sinuous; hc. subglobose, entire; ms. acute or dentate	*triplochitonis*	(390)
3113.4332	Cols. dense, velvety; hyphae straight to crooked; hc. subglobose to elongate, sublobate; ms. obtuse	*pterospermi*	(391)
3113.4232	Cols. dense, velvety; hyphae straight or crooked; hc. subglobose, entire; ms. flexuous to arcuate, obtuse	*[illegible]*	(392)
3111.4222	Cols. thin; hyphae substraight; hc. ovate to angulose; ms. obtuse; straight or flexuous	*pterospermicola*	(393)
3111.3221	Cols. thin; hyphae undulate; hc. subglobose, entire; ms. obtuse	*melochiae*	(394)
	Doubtful species *Meliola [illegible]* Cif. (395)		

(377) *Appendiculella dombeyae* (Hansf. & Deight.) Hansf. comb. nov.

= *Irene dombeyae* Hansf. & Deight., Mycol. Paper, IMI 23: 16, 1948.

Cols. epiphyllous, thin, minute. Hyphae crooked, cells mostly 20−30×6−8 μ, branching opposite or irregular at wide angles, loosely reticulate-radiating. Ch. alternate, antro4rse or spreading, straight or bent, 20−30 μ long; stc. cylindric, 5−12 μ long; hc. subglobose to clavate, straight or bent, sometimes subangulose, 13−20×10−14 μ. Mh. separate, few, opposite or alternate, ampulliform 12−18×7−9 μ. P. single or in small central group, verrucose, to 195 μ diam., surface cells rounded-convex to obtusely conoid; app. 0−12, erect-spreading, straight below, uncinate and obtuse at apex, continuous, to 160×12−16 μ, apex dark brown, hyaline below, thin-walled, smooth. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38−47×13−18 μ.

On *Dombeya buettneri*, Sierra Leone, Deighton 1452, type.

(378) *Irenopsis media* Deight., Sydowia 11: 96, 1958.

Cols. epiphyllous, dense, to 5 mm. diam., causing small dark spot in leaf tissues. Hyphae substraight, cells mostly 25−35×7−8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate,

antrorse or spreading, straight, 18—25 μ long; stc. cylindric, to cuneate, 3—7 μ long; hc. globose, entire, 14—19×13—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—25×8—10 μ. P. scattered, verrucose, to 200 μ diam.; ps. 3—10, erect-radiating, straight or slightly bent at tip, simple, obtuse, dark brown below, paler and with thinner walls at apex, continuous, to 200×8—9 μ, somewhat attenuate above, with few scattered dark grunules near apex. Sp. ellipsoid, obtuse, 4-septate, constricted, 47—52×20—22 μ.

On *Cola lateritia*, Sierra Leone, Deighton 5191, type.

(379) *Irenopsis tjibodense* Hansf., Reinwardtia **3**: 106. 1954.

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae substraight, cells mostly 25—40×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or more scattered, straight or bent, 15—23 μ long; stc. cuneate to cylindric, 5—12 μ long; hc. globose to wide clavate, entire or rarely subangulose, often bent, 11—15×11—14 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 18—23×7—9 μ. P. scattered, verrucose, to 140 diam., each surrounded by loose radiate subiculum of exhyphopodiate hyphae to 200 μ long; ps. 2—6, erect-spreading, to 120×7—8 μ, straight or slightly bent at tip, obtuse, continuous, with loosely scattered coarse dark granules on upper part, wall 1—1.5 μ thick. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 33—39×14—17 μ.

On *Pterospermum javanicum*, Java, BO 11904, type; — On *P. niveum*, Philippines, Stevens in FLS 6525.

(379a) *Irenopsis nesogordoniae* Deighton, Sydowia, **11**: 97. 1957.

Cols. amphigenous, subdense, to 1.5 mm. diam. Hyphae substraight to undulate, branching opposite, wide, closely reticulate, cells mostly 20—25×7—9 μ. Ch. alternate or very rarely opposite, antrorse, straight or slightly bent, 15—23 μ long; stc. cylindric, 2—6 μ long; hc. ovate to clavate, straight or slightly bent, entire or sinuous to sublobate, 12—19×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—20×6—8 μ. P. in central group, rugose, to 120 μ diam.; ps. 2—18, slightly flexuous above and granulose, thick-walled, continuous, to 105×7—9 μ. Sp. oblong, obtuse, 4-septate, constricted, 37—42×17—19×13 μ.

On *Nesogordonia papaverifera*, Sierra Leone, Deighton 4882-a (IMI 52995-a, type).

(380) *Irenopsis njalaensis* Hansf. & Deight., Mycol. Paper, IMI **23**: 15. 1948.

Cols. epiphyllous, dense, to 2 mm. diam., crustose. Hyphae substraight to sinuous, cells mostly 10—20×7—9 μ, branches opposite at wide angles, closely reticulate and nearly solid. Ch. alternate, straight or bent, antrorse or spreading, 15—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. subglobose to piriform, entire, 11—18×

11—17 µ. Mh. few, mixed with ch. opposite or alternate, ampulliform, 14—20×8—10 µ. P. closely scattered, verrucose, to 210 µ diam.; ps. 6—10, erect-spreading, straight below, uncinate at apex, obtuse, continuous, to 160×8—10 µ, surface finely granulose, dark brown, opaque. Sp. ellipsoid, obtuse, 4-septate, constricted, 51—62×23—28 µ.

On *Cola nitida*, Sierra Leone, Deighton 1325 p. p., type; — On *Cola simiarum*, Sierra Leone, Deighton 6220.

(381) *Irenopsis tarrietiae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 15. 1948.

Cols. hypophyllous, dense, to 2 mm. diam. Hyphae very crooked, cells mostly 15—25×5—9 µ, somewhat torulose, branching opposite or irregular, very closely interwoven-reticulate. Ch. alternate, more or less irregularly bent, 18—34 µ long; stc. cylindric or irregular, bent, 4—15 µ long; hc. subglobose, wide clavate or irregularly rounded-angulose, versiform, 13—22×11—18 µ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 16—27×7—9 µ. P. scattered, verrucose, to 220 µ diam.; ps. 8—16, erect-spreading, dark brown, uncinate, obtuse, granulose, to 160×8—9 µ. Sp. ellipsoid, obtuse, 4-septate, constricted, 47—52×20—25 µ.

On *Tarrietia utilis*, Sierra Leone, Deighton 2165, type.

(381-a) *Irenopsis aburiensis* Deighton, Sydowia **11**: 95. 1957.

Cols. hypophyllous, to 5 mm. diam. or confluent, subdense. Hyphae sinuous to substraight, branching alternate or opposite, acute to wide, closely reticulate, cells mostly 20—40×5—9 µ. Ch. alternate (or terminal on short lateral hyphye), straight or slightly bent, 20—30 µ long; stc. cylindric, 5—30 µ long; hc. subglobose to obconoid, straight or variously bent, entire or slightly sinuous, 14—22×13—17 µ. Mh. separate, opposite or alternate, ampulliform, 13—20×7—9 µ. P. scattered, verrucose, to 200 µ diam.; ps. few, dark brown, 1—2-septate, obtuse, straight below, slightly tortuous to hamate above, 75—95×8—9 µ. Sp. ellipsoid, obtuse, 4-septate, constricted, 48—53×22—24×16 µ.

On *Cola verticillata*, Gold Coast, Finsley in IMI 55448-a, type.

Many capitate hypopodia are terminal on short (—70 µ), 0—3-septate, lateral branches of the mycelium; their stalk cells are distinctly paler in colour than the hyphal cells below.

(382) *Irenopsis guianensis* (Stev. & Dowell) Stev., Ann. Mycol. **25**: 441. 1927.

= *Meliola guianensis* Stev. & Dow., Phytopath. **13**: 248. 1923.

Cols. hypophyllous, subdense, to 10 mm. diam., smooth. Hyphae undulate to crooked, branching opposite, acute to wide, closely radiating-reticulate, cells mostly 15—25×5—6 µ. Ch. alternate or very rarely opposite, antrorse or spreading, usually bent, 15—23 µ long; stc. cylindric to cuneate, 3—7 µ long; hc. ovoid, often bent,

entire or rounded-angulose, 11—16×8—11 μ. Mh. not seen. P. scattered, globose, verrucose, to 280 μ diam.; ps. 2—9, dark brown, bent to coiled at apex, obtuse, to 85×6—8 μ, 0—1-septate, wall 1—2 μ thick, dark asperate in upper part. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 49—54×17—19 μ.

On *Theobroma cacao*, British Guiana, Stevens 974 (type), 997; Trinidad, ICTA 444; Venezuela, Muller 1921 (CUP).

(383) *Irenopsis coliicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 16. 1948.

Cols. epiphyllous, subdense, to 6 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—30×8—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or bent, spreading, 22—34 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. clavate and entire to irregularly and shallowly lobate, versiform, 16—25×13—20 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—26×8—10 μ. P. scattered, verrucose, to 220 μ diam., ps. 8—10, erect-spreading, continuous, dark brown, granulose, uncinate at obtuse tip, to 120×8 μ, thin-walled. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 43—49×18—21 μ.

On *Cola nitida*, Sierra Leone, Deighton 1853, type; 1340, 1339, 1325; Gold Coast, Deighton CB 823; French Guinea, Schnell 1789 (P); — On *C. caricifolia*, Sierra Leone, Deighton 560, 1342, 1889; Gold Coast, Hughes in IMI 43661, 43662.

(384) *Irenopsis buettneriicola* Deighton, Sydowia **5**: 2. 1951.

Cols. amphigenous, sometimes caulicolous, subdense, to 1 mm. diam. or confluent. Hyphae straight or slightly undulate, cells mostly 20—30×7—9 μ, branching opposite or irregular, acute or obtuse, closely reticulate. Ch. alternate, slightly antrorse, substraight or bent, 20—30 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. subglobose to wide clavate, entire, angulose or sublobate, versiform, 16—22×14—17 μ, straight or bent. Mh. numerous, mixed with ch., narrow ampulliform, opposite or alternate, 18—30×7—8 μ. P. scattered, globose, verrucose, to 205 μ diam., surface cells obtusely tuberculate, to 6 μ high; ps. 1—10, erect-spreading, dark brown, dontinuous, granulose, obtuse, substraight or slightly flexuous to sometimes almost uncinate at apex, 65—110×7—9 μ, apex 6—8 μ thick. Sp. oblong, obtuse, 4-septate, constricted, 36—45×17—20×13—14 μ.

On *Buettneria* sp., Sierra Leone, Deighton 2644, type; — On *Sterculia spanoghei*, Java, BO 12574 (material scanty and determination uncertain).

(385) *Irenopsis triumfettae* (Stev.) Hansf. & Deighton.

For synonomy and description, see under *Tiliaceae*, supra, p.

On *Helicteres guazuniaefolia*, Panama, Stevens 910 (FLS).

(386) *Irenopsis colae* Hansf., Proc. Linn. Soc. London, **157**: 169. 1946.

Cols. hypophyllous, thin, effuse, to 20 mm. diam. Hyphae straight or undulate, cells mostly 20—25×7—8 μ, branching irregular at wide angles, loosely reticulate. Ch. alternate, often sharply bent, 20—30 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. subglobose to ovate, entire, straight or often sharply bent at the base, 12—20×12—15 μ. Mh. not seen. P. scattered, verrucose, to 180 μ diam.; ps. 10—15, erect-spreading, continuous, brown, obtuse, straight below, flexuous to uncinate at tip, asperate, to 220×Y0 μ, thin-walled. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—43×15—17 μ.

On *Cola* sp., Congo Belge, Hendrickx 878, type; — On *C. lateritia*, Gold Coast, Hughes in IMI 34501, 44503.

(386a) *Irenopsis leptonychiae* Deighton, Sydowia **11**: 96. 1957.

Cols. epiphyllous, rarely also hypophyllous, dense to 1.5 mm. diam. Hyphae straight, branching opposite or alternate, wide, closely reticulate, cells mostly 10—20×7—10 μ. Ch. alternate, usually straight, antrorse, 16—24 μ long; stc. cylindric, 2—7 μ long; hc. subglobose to obovate, entire or angulose, rarely sublobate, 11—19×11—15 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 16—22×6—9 μ. P. scattered, verrucose, to 185 μ diam.; ps. 0—6, straight below, curved, sinuous or tortuous above, obtuse, granulose, continuous, to 95×8 μ. Sp. oblong, obtuse, 4-septate, constricted, 34—42×15—16×11—12 μ.

On *Leptonychia pubescens*, Gold Coast, Deighton 5450-a (IMI 55445-a, type).

Hypophyllous colonies are thinner, with slightly flexuous hyphae; hc. clavate to piriform and often angulose to sublobate.

(387) *Irenopsis curvata* (Yates) Stev., Ann. Mycol. **25**: 437. 1927.
= *Meliola curvata* Yates, Philipp. Journ. Sci., C. Botany, **13**: 367. 1918.

Cols. epiphyllous, numerous, to 1 mm. diam., dense, smooth. Hyphae substraight to undulate, cells mostly 15—25×7—8 μ, branching opposite or irregular, acute or wide, closely radiating-reticulate, becoming almost solid. Ch. alternate, more or less antrorse, straight or bent, 15—22 μ long; stc. cuneate to cylindric, straight or bent, 3—7 μ long; hc. piriform to clavate, entire, sometimes subglobose, 12—15×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—18×6—8 μ. P. in central group, or single, slightly verrucose, to 160 μ diam.; ps. 0—6, spreading-erect, to 140 μ long; simple, obtuse, continuous, straight below, spirally twisted or tightly contorted at apex. 7—9 μ thick, translucent pale brown with wall 2—3 μ thick, smooth. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—38×13—15 μ.

On *Melochia umbellata*, Philippines, PBS 24642, type (S, P, FLS).

(388) *Asteridiella buettneriae* (Stevenson) Hansf., Sydowia **10**: 47. 1957.

= *Meliola (Irenina) buettneriae* Stevenson, Mycologia **35**: 629. 1943.

Cols. epiphyllous and caulocolous, dense, smooth, to 3 mm. diam., each on a definite brown spot. Hyphae substraight to slightly undulate, branching opposite, acute, densely reticulate and nearly solid in places, cells mostly 20—28×8—10 μ. Ch. apposite or alternate in varying proportions, antrorse, straight or slightly bent, 19—28 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. subglobose, ovate, piriform or irregularly angulose to sublobate, often bent, 15—20× 11—20 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 15—20×7—8 μ. P. in loose central group, verrucose, to 200 μ diam., surface cells rounded, to 12 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—49×16—18.5×13—15 μ.

On *Buettneria ramosissima*, Brazil, A. S. Muller 1058, type (USDA).

(389) *Meliola sterculiae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 18. 1948.

Cols. epiphyllous, thin to dense, to 5 mm. diam. Hyphae substraight to slightly flexuous, cells mostly 10—20×7—8 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 15% opposite, subantrorse, straight, 13—16 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to short cylindric, entire, 8—12×7—10 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform to conoid, 13—20×7—9 μ. Ms. scattered, to 250×7—8 μ, straight, apex 2—3-dentate to 15 μ, or shortly bifurcate with dentate branches. P. scattered, verrucose, to 155 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 37—43×15—19 μ.

On *Sterculia tragacantha*, Sierra Leone, Deighton 407, type, 1030, 1190, 1191, 1474, 1591, 2228.

(390) *Meliola triplochitonis* Hughes, Mycol. Paper, IMI **50**: 39. 1953.

Cols. amphigenous, mostly epiphyllous, to 9 mm. diam. or confluent. Hyphae sinuous to substraight, cells mostly 15—38×6—7 μ, branching opposite or irregular, reticulate. Ch. alternate or 5% opposite, straight, antrorse or spreading, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. subglobose to short cylindric, entire, 9—12×8—10 μ. mh. mixed with ch., opposite or alternate, ampulliform, to conoid, 13—25×6—8 μ. Ms. scattered, straight or slightly bent, to 360× 7—8 μ, apex simple and acute or irregularly 2—4-dentate to 14 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—34×11—14 μ.

On *Triplochiton scleroxylon*, Gold Coast, Hughes in IMI 46762, 46761; Nigeria, IMI 46760.

(391) *Meliola pterospermi* Stev., Mem. Dept. Agric. India, Bot. Ser., **15**: 5: 108. 1928.

Cols. epiphyllous, 1—3 mm. diam., dense, often confluent over leaf, velvety. Hyphae substraight to crooked, cells 15—20×7—8 μ, branching opposite or irregular at wide angles, close, densely reticulate and nearly solid. Ch. alternate or about 4% opposite, straight or bent, subantrorse, 20—27 μ long; stc. cylindric, 3—8 μ long; hc. subglobose to elongate, margin irregularly crenate to sublobate, 15—21×11—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—25×7—9 μ. Ms. numerous, simple, obtuse, to 450×10—11 μ, straight, flexuous or sometimes broadly arcuate above. P. scattered, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 44—50×20—22×15—17 μ.

On *Pterospermum* sp., Burma, Butler in IMI 25710, type.

(392) *Meliola colae-simiarum* Deighton, Sydowia **11**: 102. 1958.

Cols. caulicolous, to 5×3 mm., dense, velvety. Hyphae substraight to crooked, cells mostly about 20×7—9 μ, branching opposite or irregular, close, densely reticulate and solid in centre. Ch. opposite or alternate, spreading, straight or bent, 14—18 μ long; stc. cylindric, 3—7 μ long; hc. subglobose, entire, 11—14×9—14 μ. Mh. not seen. Ms. numerous, scattered, flexuous, sometimes broadly arcuate, simple, obtuse, to 320×9—11 μ. P. scattered, verrucose, to 270 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—50×17—19×15—16 μ.

On *Cola simiarum*, Sierra Leone, Deighton 5948, type.

(393) *Meliola pterospermicola* Stev. & Rold., Philipp. Journ. Sci. **56**: 69. 1935.

Cols. epophyllous, very thin, to 10 mm. diam. Hyphae substraight, cells mostly 30—50×5—7 μ, branching opposite or irregular, acute or wide, loosely radiating-reticulate and interwoven. Ch. alternate or more scattered, antrorse or spreading, straight or slightly bent, 22—30 μ long; stc. cylindric, 5—9) long; hc. ovate to clavate, entire or slightly rounded-angulose, 15—23×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—24×6—8 μ. Ms. mostly grouped around P., straight or somewhat flexuous, simple, obtuse, to 350×8—9 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 36—45×16—20 μ.

On *Pterospermum obliquum*, Philippines, Stevens 498, type (FLS, C), PBS 3091 (S).

(394) *Meliola melochiae* Hansf. Sydowia, Beih. **1**: 112. 1957.

Cols. epiphyllous, less commonly also hypophyllous, to 2 mm. diam., thin. Hyphae undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, spreading or subantrorse, mostly straight, 11—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to piriform, entire, 8—12×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×

6—8 μ. Ms. grouped around P., straight or somewhat flexuous, simple obtuse, to 280×8—9 μ. P. in close central group, verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 32—37× 14—16 μ.

On *Melochia umbellata*, Philippines, PBS 24642 p. p., type (S, P, FLS).

In the type collection this occurs mixed with *Irenopsis curvata*, from which it is easily distinguished by its looser colonies, thinner mycelium and smaller hypopodia.

(395) "*Meliola monilipes*" Ciferri, Mycopathologia **7**: 158. 1954.

"Cols. fuscous to reddish-brown, often indistinct, effuse, rounded, 3 mm. diam. Hyphae little branched, often opposite, more or less regular, brown, septate, 5—6 μ wide; ch. sessile, elliptic to ovate, hemispheric, alternate or unilateral; mh. not seen; setae none; P. black, few, globose, 100—140 μ diam.; sp. elliptic to ovoid, ends rounded, brownish, 4-septate, slightly constricted, 45—49×18—20 μ".

On *Guazuma ulmifolia*, San Domingo, Ciferri 3094, 3095.

The above description, as well as Ciferri's drawing of the mycelium, indicate that this belongs either to *Schiffnerula* or to *Clypeolella*, both of which genera have hemispheric hypopodia without stalk cells. The spores described belong to some species of *Meliolineae*, but not to the mycelium included in the description, and may not even be parasitic on this host plant. No known species of the whole group of the *Meliolineae* has hypopodia of this type. Ciferri's "species" is for these reasons considered hightly doubtful by the present author, who has not had the opportunity of examining the specimen.

Host Famila 131. Bombacaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.3220	Cols. dense, subcrustose; hyphae substraight; hc. subglobose, entire or angulose	*tonsa*	(396)

Meliola

3133.4221	Cols. thin to dense; hyphae substraight to flexuous; hc. subglobose, entire	*sterculiae*	(397)
3111.42×3	Cols. subdense; hyphae straight; hc. oblong, entire; ms. obtuse	*durionis*	(398)

(396) **Asteridiella tonsa** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) tonsa*, Ciferri, Mycopathologia **7**: 194. 1954.

Cols. amphigenous, mostly epiphyllous, dense, subcrustose, to 3 mm. diam. Hyphae straight or slightly undulate, branching opposite or irregular, at wide angles, closely reticulate, cells mostly 15—25× 9 μ. Ch. alternate, spreading, straight or bent, 18—25 μ long; stc.

cylindric to cuneate. 4—8 μ long; hc. subglobose to oblong, entire or angulose, 9—11 μ diam. or 14—18×8—11 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 14—18×9 μ. P. scattered, to 120 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 36—40×19—22 μ.

On *Pachyra emarginata*, San Domingo, Ekman s. n., type (not seen by present author).

(397) ***Meliola sterculiae*** Hansf. & Deighton.

For description see above, under *Sterculiaceae*, p.

On *Bombax buonopozense*, Sierra Leone, Deighton 2128, 1846.

(398) ***Meliola durionis*** Hansf., Sydowia **10**: 70. 1957.

Cols. epiphyllous, subdense, to 3 mm. diam. or sumerous and confluent. Hyphae straight, cells mostly 20—30×7—9 μ, branching opposite at wide angles, loosely to closely interwoven-reticulate. Ch. alternate, subantrorse or spreading, straight or slightly bent, 22—33 μ long; stc. cylindric, 3—7 μ long; hc. cylindric, widely rounded at apex, entire, 15—25×9—12 μ. Mh. mixed with ch., alternate, ampulliform, 20—25×7—9 μ. Ms. grouped around P., srtaight, simple, attenuate to obtuse apex, to 700×10—12 μ. P. scattered, verrucose, immature. Sp. ellipsoid, obtuse, 4-septate, constricted, 43—47×22—24 μ.

On *Durio zibethinus*, Malaya, Johnston 739, 1240 (IMI).

Host Family 132. Malvaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4220	Cols. thin; hyphae undulate to flexuous; hc. ovate-piriform, entire to sublobate; ps. substraight to flexuous, to 190 μ	*molleriana*	(399)
3401.4220	Cols. denser; hyphae thicker; hc. larger; sp. 38—45 × 17—20 μ	*molleriana* var. *major*	(400)
3401.4220	Cols. thin; hyphae flexuous; hc. angulose to lobate; ps. straight, acute, —110 μ	*hoheriae*	(401)
3401.4220	Cols. thin; hyphae crooked; hc. globose, entire; ps. uncinate to coiled above, obtuse, —105 μ	*sidicola*	(402)
3401.3220	Cols. thin; hyphae flexuous; hc. ovate to sublobate; ps. incurved, thick-walled, acute, —100 × 10—12 μ	*aciculosa*	(403)
3401.3220	Cols. thin; hyphae flexuous; hc. ovate, entire; ps. substraight, acute, —170 × 7—8 μ	*thespesiae*	(40)4
3401.3220	Cols. thin; hyphae substraight to flexuous; hc. angulose to sublobate; ps. straight, acute, —300 × 8 μ	*sidae*	(405)
3401.3220	Cols. thin; hyphae flexuous; hc. angulose to lobate; ps. substraight or bent, acute, —140 × 7—9 μ	*sidae* var. *hibisci*	(406)

3401.3220 Cols. thin; hyphae tortuous; hc. subglobose to angulose; ps. straight or incurved, obtuse, —100 × 6—7 μ. ..... *bastardiopsidis* (407)

Asteridiella

3101.4220 Cols. thin; hyphae substraight; hc. globose to angulose ..... *pavoniae* (408)

Meliola

3111.3222 Cols. dense, velvety; hyphae crooked; hc. angulose to lobate; ms. obtuse to acute ..... *kydiae-calycinae* (409)

(399) *Irenopsis molleriana* (Wint.) Stev., Ann. Mycol. **25**: 437. 1927.

= *Meliola molleriana* Wint., Hedwigia **25**: 98. 1886.

= *Meliola (Irenina) procera* Ciferri, Ann. Mycol. **36**: 219. 1938.

Cols. epiphyllous, rarely amphigenous or caulicolous, to 3 mm. diam., thin to subdense, often numerous and confluent. Hyphae undulate to flexuous, cells mostly 25—30 × 5—7 μ, branching opposite or alternate, at wide angles, loosely reticulate and interwoven. Ch. alternate or more scattered, antrorse or spreading, usually straight, 15—20 μ long; stc. cylindric, 4—8 μ long; hc. ovate, piriform, or rounded-angulose, often sublobate, 10—14 × 10—16 μ. Mz. mixed with ch., opposite or alternate, ampulliform, 15—22 × 6—8 μ. P. scattered, verrucose, to 200 μ diam.; ps. 0—8, erect-spreading, dark brown, simple, obtuse, substraight (or on Hibiscus gossypinus often somewhat tortuous above) often bent at one or two points, smooth, to 190 × 7—9 μ, wall 1—2.5 μ thick, 2—4-septate with thin septa. Sp. oblong to subelli'psoid, obtuse, 4-septate, constricted, 33—43 × 12—16 × 10—14 μ.

On *Malvaceae* indet., San Thomé, Moller, 1885, type (K, S); — On *Hibiscus asper*, Sierra Leone, Deighton 1281; — On *H. gossypinus*, Uganda, Hansford 1360, 1415, 2822, 2610; — On *H. furcatus*, Sierra Leone, Deighton 1089, 1503, 1713; — On *H. mutabilis*, Sierra Leone, Deighton 1082; — On *H. sabdariffa*, Sierra Leone, Deighton 320, 550, 1273, 1274, 1275; — On *H. scotellii*, Sierra Leone, Deighton 359, 2034; — On *H. sterculiifolius*, Sierra Leone, Deighton 1095; — On *H. surrattensis*, Sierra Leone, Deighton 12808 — On *H. similis*, Java, BO 14467, 13007, 10950; — On *H. tiliaceus*, San Domingo, Ciferri, Mycofl. doming. exs. 231 (type of *M. procera*), Petrak, Mycoth. gener. 1432; Panama, Stevens 482; Porto Rico, Stevens 8962, 8073; — On *H.* spp., Uganda, Dummer 1471, Hansford 1263, 1932; Congo Belge, Vanderyst 2049, 4337 (BRUX); — On *Abutilon stratum*, Paraguay, Bertoni 549 p. p. (=SPEG 616); — On *A.* sp., Venezuela, Muller 2125 (CUP); — On *Malache* sp., Panama, Stevens 913, 602, 1346; — On *M. sessili-*

flora, Panama, Stevens 125; — On *M. ovata*, Panama, Stevens 118; — On *Sida cordifolia*, Sierra Leone, Deighton 1248, 2126; — On *S. glabra*, Jamaica, Thaxter 7221 (F); — On *S. linifolia*, Sierra Leone, Deighton 208, 824, 1436, 1795; Gold Coast, Hughes in IMI 39586; — On *S. pyramidata*, Jamaica, Thaxter 7442 (F); — On *S.* spp., Congo Belge, Vanderyst 43964, 43966, 43232, 16645, 1066 (BRUX); — On *Urena lobata*, Sierra Leone, Deighton 490, 738, 2127; Gold Coast, Deighton CB 762; Uganda, Dummer 2331, Hansford 1788, 2022, 2402, 2606, 3410, 3528; Java, BO 2647, 3235, 4639; — On *Malvaceae* indet., Costa Rica, Stevens 746.

In some specimens occasional spores are found larger than the range given above, up to 48 μ long and to 17.5 μ wide.

(400) *Irenopsis molleriana* (Wint.) Stev. var. *major* Hansf., Sydowia **10**: 44. 1957.

Cols. amphigenous, mixed with those of the type, and differing in denser colonies, thicker mycelium and larger hyphopodia and spores, smooth, to 1 mm. diam. Hyphae substraight to undulate, cells mostly 15—30×7—9 μ, branching opposite or irregular, subrectangular, closely reticulate. Ch. alternate, spreading, straight or bent, 20—28 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. irregularly subglobose to ovate, often bent, margin crenulate or rounded-angulose, rarely sublobate, not entire, 15—19×12—17)μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22×7—8 μ. P. in loose central group, verrucose, to 170 μ diam.; ps. 0—6, spreading-erect, straight or slightly bent, simple, obtuse, dark brown, smooth, mostly 2-septate, to 140×8—9 μ, attenuate to 5—6 μ at apex. Spores subellipsoid, obtuse, 4-septate, constricted, 38—45×17—20 μ.

On *Pariti* (Hibiscus) *tiliaceum*, Porto Rico, Whetzel 2620, type, (CUP); Stevens 7249 (FLS).

(401) *Irenopsis hoheriae* Hansf., Sydowia **9**: 2. 1955.

Cols. epiphyllous, thin, to 2 mm. diam., sometimes confluent. Hyphae undulate, cells mostly 15—20×6—7 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, antrorse, straight, 16—21 μ long; stc. cylindric, 4—7 μ long; hc. irregularly globose, angulose to sublobate, 10—14×10—13 μ. Mh. mixed with few ch. on separate hyphae, opposite or alternate, ampulliform, 14—22×7—9 μ. P. scattered, verrucose, to 190 μ diam., ps. 8—12, spreading-erect, straight or slightly flexuous, obtuse to acute, transparent pale brown, apparently continuous, smooth, to 110×7—8 μ, wall 3—4 μ thick. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—45×17—19×14—15 μ.

On *Hoheria sexstylosa*, New Zealand, Colenso b-133, type (K).

(402) **Irenopsis sidicola** (Stev. & Tehon) Hansf., comb. n.
= *Irene sidicola* Stev. & Tehon, ;ycologia **18**: 21. 1926.
= *Irenopsis molleriana* (Wint.) Stev. var. *sidicola* (Stev. & Tehon) Stev., Ann. Mycol. **25**: 438. 1927.

Cols. amphigenous, mostly hypophyllous, small, to 3 mm. diam., thin and diffuse. Hyphae crooked, cells mostly 20—30×6—7 μ, branching alternate or opposite at wide angles, loosely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or bent. 12—20 μ long; stc. cuneate to cylindric, 3—8 μ long; hc. globose to less commonly ovate, entire, 9—14×8—13 μ. Mh. separate or mixed with ch., opposite or alternate, ampulliform, 14—20×7—8 μ. P. scattered, verrucose, to 150 μ diam.; ps. 2—8, straight below, uncinate to coiled at obtuse apex, to 105×7—8 μ, continuous or thinly 1—2-septate, thick-walled (2—2.5 μ), brown, granulose to asperate above. Sp. oblong, obtuse, 4-septate, constricted, 27—34×11—14 μ.

On *Sida* sp., British Guiana, Stevens 478, type (FLS).

(403) *Irenopsis aciculosa* (Wint.) Stev., Ann. Mycol. 25: 438. 1927.
= *Meliola aciculosa* Wint., Hedwigia 25: 98. 1886.

Cols. epiphyllous, less commonly amphigenous or cauloiclous, to 2 mm. diam., often widely confluent, thin. Hyphae substraight to flexuous, often tortuous, cells mostly 15—30×6—9 μ, branching opposite or alternate, acute to wide, loosely reticulate and interwoven. Ch. alternate, straight or often bent, spreading or subantrorse, 12—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to piriform, usually rounded-angulose to sublobate, often bent, 8—15×10—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 12—20×6—8 μ. P. scattered, verrucose, to 170 μ diam.; ps. 0—7, dark brown, erect, strongly incurved in upper half, acute to acuminate, smooth or indistinctly asperulate, walls 1—4 μ thick, irregular, 2—4-septate with thin septa, to 105×10—13 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 30—36×11—14×10—11 μ.

On *Sida carpinifolia*, San Thomé, Moller, 1885, type (K, S); Sierra Leone, *Deighton* 563, 943, 1016, 1252, 1253, 1317, 1437, 1483; Gold Coast, *Deighton* CB 741; — On *S. cordifolia*, Sierra Leone, Deighton 1249; Congo Belge, Vanderyst 20067 (BRUX); — On *S. urens*, Sierra Leone, Deighton 224, 823, 1251, 1458; Gold Coast, Hughes in IMI 38904, Deighton CB 863; Congo Belge, Vanderyst 4273 (BRUX); Porto Rico, Stevens 4184, 8209, Whetzel 2580, 2548, Stevens 7310, 7239, 8031, 6009, 9486, 9151, 4114, 3243, 4580, 7508, 3530, 483, 8079, 6693, 9498, Fink 1342 (FLS), Chardon 872, 858; Trinidad, ICTA 254; Jamaica, Hansford 586; — On *S. veronicaefolia*, Sierra Leone, Deighton 1462; — On *S. acuta*, Colombia, Orejuela 1349 (CUP); — On *S. stipulata*, Gold Coast, Hughes in IMI 39588, 39589, 39590, 29591, 29592, 39593; — On *S.* sp., Colombia, Orejuela 1328; Costa Rica, Stevens 423; Panama, Stevens 917; Congo Belge, Vanderyst 21317 (BRUX); Jamaica, Thaxter 7349 (F); — On *Hibiscus abelmoschus*, Sierra Leone, Deighton 1393, 1939; — On *H. esculentus*, Sierra Leone, Deighton 498, 938, 1084, 1276, 1277, 1278, 1279, 1444, 2216; Gold Coast, Deighton

CB 906; — On *H. physaloides*, Sierra Leone, Deighton 1445; — On *H. similis*, Java, BO 10950; — On *Abelmoschus moschatus*, Java, BO 12337, with more regular hc.; — On *Malvaceae* indet. (? *Abutilon* sp.), Cuba, Wright 391 (K); Jamaica, Thaxter 7348 (F).

(404) *Irenopsis thespesiae* Hansf., Reinwardtia **3**: 91. 1954.

Cols. epiphyllous, to 2 mm. diam. or numerous and confluent, thin. Hyphae substraight to undulate, cells mostly 20—30×5—7 μ, branching opposite or irregular at acute angles, loosely reticulate. Ch. alternate or about 1% opposite, subantrorse, straight or bent, 13—19 μ long; stc. cylindric, 3—7 μ long; hc. globose, ovate or clavate, entire or sometimes slightly rounded-angulose, straight or slightly bent, 9—13×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. P. loosely scattered, slightly verrucose, to 130 μ diam.; ps. 0—6, erect-spreading, straight or slightly bent, simple, acute, 2—3-septate, smooth, to 160×7—8 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—36×12—14×11—12 μ.

On *Thespesia lampas*, Java, BO 14451, type.

(405) *Irenopsis sidae* (Rehm) Hughes, Mycol. Paper, C. M. I., **48**: 44. 1952.

= *Meliola sidae* Rehm. Philipp. Journ. Sci., C, Botany, 8: 391. 1913.

Cols. mostly epiphyllous, to 3 mm. diam. or confluent, rather thin. Hyphae substraight to flexuous, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, loosely to closely interwoven and radiating-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 14—19 μ long; stc. cylindric, 3—7 μ long; hc. rarely piriform and entire, usually rounded-angulose to sublobate, straight or bent, 10—16×10—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—21×6—8 μ. P. scattered, verrucrse, to 160 μ diam.; ps. 4—12, spreading-erect, up to 300×8 μ, straight, simple, acute, gradually attenuate to apex, smooth, dark brown, 3—5-septate, arising all from sides or upper part of O.; Sp. oblong to narrow ellipsoid, obtuse, 4-septate, slightly constricted, 31—37×10—13 μ.

On *Sida javanensis*, Philippines, Baker 117, type (S); Rehm, Ascomyc. 2077 (S).

On *S. mysorensis*, Philippines, Baker 255 (K); On *S.* sp., Philippines, Stevens 802 (FLS); New Guinea, Shaw 1222 (WARI 7762).

(406) *Irenopsis sidae* (Rehm) Hughes, var. *hibisci* (Hansf.) Hughes, Mycol. Paper, C.M.T., **48**: 44. 1952.

= *Irenopsis coronata* (Speg.) Stev. var. *hibisci* Hansf., Journ. Linn. Soc. London, **51**: 267. 1937.

= *Meliola sidae* Reh. var. *hibisci* (Hansf.) Deight., Mycol. Paper, IMI **9**: 13. 1944.

Cols. mostly hypophyllous, thin, 1—2 mm. diam. Hyphae flexuous, cells 15—33×6—8 μ, branchking opposite or irregular at wide

angles, loosely reticulate. Ch. alternate, antrorse or spreading, usually bent, 14—22 μ long; stc. cylindric, 4—8 μ long; hc. subglobose or more often rounded-angulose to shallowly lobate, often irregularly bent, versiform, 10—15×10—15 μ. Mh. ampulliform, mixed with ch., opposite or alternate, 12—18×6—8 μ. P. scattered, verrucose, to 150 μ diam., ps. 1—3, arising from upper half of P., curved, rarely almost straight, tapering to acute apex, 2—3-septate, to 140×7—9 μ, wall smooth, 1—2 μ thick. Sp. oblong, obtuse, 4-septate, constricted, 31—40×14—15×10—11 μ.

On *Hibiscus* sp., Uganda, Hansford 1544 (type), 2595, 1300, 2473; — On *H. owariensis*, Gold Coast, Deighton CB 805, Hughes in IMI 44521; — On *Sida carpinifolia (S. acuta)*, Philippines, Sydow, Fung. exot. exs. 381 (K, S. FLS), PBS 24066, 24021, Elmer 14777, Stevens 802.

(407) *Irenopsis bastardiopsidis* (Speg.) Stev., Ann. Mycol. **25**: 437. 1927.

= *Meliola bastardiopsidis* Speg., Anal. Mus. Nac. Buenos Aires **32**: 348. 1924.

Cols. epiphyllous, to 2 mm. diam. or numerous and confluent, smooth, thin. Hyphae tortuous, branching opposite or irregular at wide angles, loosely interwoven-reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, antrorse or spreading, straight or bent, 14—22 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. subglobose to irregular, usually rounded-angulose, rarely sublobate, 11—14×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—17×6—7 μ. P. scattered ,verucose, to 170 μ diam.; ps. 2—6 on upper half, erect-spreading, straight or incurved, not uncinate, simple, obtuse, pale translucent brown, smooth, continuous or -1septate, to 100×6—7 μ. Sp. oblong, 4-septate, constricted, 30—36×13—15 μ.

On *Bastardiopsis densiflora*, Argentina, SPEG 512, type.

(408) **Asteridiella pavoniae** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) pavoniae* Cif., Mycopathologia **7**: 170. 1954.

Cols. epiphyllous, 1—2 mm. diam., asterinioid. Hyphae brown, closely septate, little branched at 90è, 6—8 μ wide. Ch. numerous, unilateral or opposite; hc. globose or ovate to slightly sinuate, 9—12 μ diam. or 16—19×9—12 μ; stc. 3.5—7 μ long. Mh. few, elongate, simple; no setae. P. black, opaque, 250 μ diam. or less. Sp. brown, 4-septate, ovate, ellipsoid or cylindric, slightly constricted, 38—41×18—20 μ.

On *Pavonia spicata*, San Domingo, Ekman 2799, type (not seen by the present author).

(409) *Meliola kydiae-calycinae* Hansf. & Thirum., Farlowia **3**: 296. 1948.

Cols. amphigenous, mostly epiphyllous, to 4 mm. diam., dense, velvety, often numerous and confluent. Hyphae crooked, cells 20—30×

7—9 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate, spreading, 15—24 μ long, straight or bent; stc. cylindric, 4—10 μ long; hc. irregularly angulose to shallowly 3-lobate, straight or bent, 10—15×12—19 μ. Mh. few, separate, opposite or alternate, conoid to ampulliform, 16—23×6—8 μ. Ms. numerous, closely scattered and grouped around P., straight or irregularly bent, not hamate or uncinate, opaque, simple, rarely obtuse, usually acute or apiculate-acute, to 340×11—14 μ. P. glabrous, verrucose, scattered, to 180 μ diam., surface cells conoid. Sp. narrowly ellipsoid to cîindric, obtuse, 4-septate, 33—39×10—12 μ, slightly constricted.

On *Kydia calycina*, Mysore, India, Thirumalachar 852, type.

Host Family 133. Malpighiaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3403.32×0	Cols. thin to subdense; hyphae substraight; hc. subglobose, entire; ps.	sp. ined.	(410)
3401.5330	Cols. thin; hyphae undulate; hc. angulose to lobate; ps. straight, obtuse, —170 μ	*hiptages*	(411)
3401.4220	Cols. thin; hyphae substraight; hc. globose-ovate, entire; ps. straight, acute, —150 μ	*chaethachna*	(412)
3401.4220	Cols. dense; hyphae undulate to flexuous; hc. angulose to sublobate; ps. straight, obtuse, smooth, —90 μ	*malpighiae*	(413)
3401.4220	Cols. thin; hyphae straight to undulate; hc. oblong, entire; ps. straight, obtuse, aperate, —180 μ	*banisteriae*	(414)
3¾01.4220	Cols. dense; hyphae substraight; hc. globose, entire; ps. straight or subuncinate, obtuse, asperulate, —160 μ	*stuhlmanniana*	(415)
3301.5220	Cols. thin to subdense; hyphae undulate to crooked; hc. globose, entire or subangulose; ps. obtuse, contorted at apex, asperulate, —140 μ	*malpighiicola*	(416)
3301.4220	Cols. very thin; hyphae substraight; hc. globose; ps. obtuse, hamate to uncinate, granulose	*acridocarpicola*	(417)
3301.3220	Cols. thin; hyphae undulate; hc. ovate to angulose; ps. circinate to hamate, slightly asperulate, —50 μ	*circinate*	(418)
3301.3220	Cols. subdense; hyphae substraight to sinuous; hc. subglobose, entire; ps. tortuous to hamate above, obtuse, granulose	*triaspidis*	(418)

Asteridiella

3103.4220	Cols. thin; hyphae substraight; hc. globose to ovate	*stellata*	(419)
3101.4230	Cols. thin to subdense; hyphae undulate; hc. subglobose, entire	*stigmaphylli*	(420)
3101.4220	Cols. dense; hyphae undulate; hc. angulose to sublobate	*cuspidata*	(421)
3101.3220	Cols. thin; hyphae ...; hc. globose	*ozamensis*	(422)

Meliola

3133.6322	Cols. thin; hyphae crooked; hc. ovate, entire; ms. with short obtuse teeth	*crenata*	(423)
3133.5221	Cols. thin; hyphae substraight; hc. ovate; ms. with obtuse teeth to 10 μ	*crenata* var. *bunchosiae*	(424)
3133.3222	Cols. thin; hyphae substraight; hc. bent oblong; ms. crenate-denticulate	*crenato-furcata*	(425)
31⅓3.5221	Cols. thin; hyphae substraight to flexuous; hc. ovate-clavate, bent; ms. obtuse or 3-5-dentate	*xenoderma*	(426)
31⅓1.3221	Cols. thin; hyphae sinuous; hc. ovate to clavate, entire; ms. obtuse, dentate or short-furcate	*malpighiacearum*	(427)
3113.4322	Cols. dense; hyphae straight; hc. globose to angulose; ms. obtuse	*byrsonimina*	(428)
3113.4223	Cols. thin; hyphae substraight; hc. ovate to angulose; ms. acute	*cibaoensis*	(429)
3111.5333	Cols. dense, velvety; hyphae straight; hc. globose to piriform, entire; ms. obtuse to subacute	*byrsonimicola*	(430)
3111.5324	Cols. thin; hyphae straight; hc. large ovate to piriform; ms. obtuse or acute	*byrsonimae*	(431)
3111.4234	Cols. subdense, subvelvety; hyphae straight; hc. ovate, entire; ms. obtuse or acute	*byrsonimar* var. *minor*	(432)

(410) *Irenopsis* sp.

Cols. epiphyllous, thin to subdense, to 2 mm. diam. Hyphae substraight to slightly flexuous, branching opposite at wide angles, closely reticulate, cells mostly 20—25×7—8 μ. Ch. opposite or alternate, spreading, straight or slightly bent, 14—21 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to piriform, entire, 11—15×9—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ.

On *Flabellaria paniculata*, Sierra Leone, Deighton 2275 p. p.

The material is too scant and poor to complete the description given above, but there is little doubt that further collections will show this to be a new species.

(411) *Irenopsis hiptages* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 222. 1941.

Cols. amphigenous, to 3 mm. diam., thin. Hyphae more or less undulate, cells 18—30×7—8 μ, branching opposite or irregular, loosely reticulate. Ch. alternate, 20—28 μ long; stc. Iclindric, 5—9 μ long; hc. angulose to irregularly 3—4-lobate, 15—70×11—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—25×7—8 μ. P. in central group, verrucose, to 225 μ diam.; ps. 8—13, straight, obtuse, dark brown, to 170×9—10 μ. Sp. cylindric to ellipsoid, obtuse, 4-septate, rather deeply constricted, 44—53×16—23 μ.

On *Hiptage bengalensis*, Formosa, Yamamoto, type; — On *Ecdysanthera utilis*, Formosa, Yamamoto.

Specimens of this species have not been available to the present author.

(412) **Irenopsis chaethachna** (Cif.) Hansf., comb. n.

= *Meliola (Irenopsis) chaethachna* Cif., Mycopathologia **7**: 110. 1954.

Cols. amphigenous, mostly epiphyllous, 1—2 mm. diam. or confluent, thin. Hyphae substraight, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 30—40×6—7 μ. Ch. alternate, or very rarely (less than 1%) opposite, subantrorse, straight or bent, 17—21 μ long; stc. cuneate to cylindric, 6—8 μ long; hc. globose to ovate, entire or rarely somewhat angulose, 10—14×10—12 μ Mh. few, mixed with ch., alternate or opposite, conoid to ampulliform, 18—22×7—8 μ. P. subaggregate in centre of colony, verrucose, to 190 μ diam., surface cells obtusely conoid, to 12 μ high; ps. 4—15, radiating-erect, straight, acute, smooth, dark brown, 1—2-septate, to 150×7—9 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 37—43×15—18 μ.

On *Stigmatophyllum lingulatum*, San Domingo, Ekman 4194, type; — On *S. puberum*, Porto Rico, Whetzel 2618 (CUP).

(413) *Irenopsis malpighiae* Hansf., Proc. Linn. Soc. London **160**: 121. 1948.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae undulate to flexuous, cells mostly 15—20×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or less than 1% opposite, antrorse or spreading, straight or bent, 15—24 μ long; stc. cylindric, 5—9 μ long; hc. clavate to irregularly angulose or sublobate, often sharply antrorse-bent, 11—17×8—13 μ. Mh. few, scattered amongst ch., opposite or alternate, conoid to ampuoliform, 15—20×7—9 μ. P. loosely scattered, verrucose, to 180 μ diam., ps. 4—7, spreading-erect, dark brown, straight to slightly incurved, 2-septate, simple, obtuse, to 80×7—9 μ, slightly attenuate upwards, smooth, wall 1—2 μ thick. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—42×16—19 μ, rarely the ends sub-apiculate.

On *Malpighia glabra*, Costa Rica, Sydow, Fung. exot. exs. 681 p. p., type.

(414) *Irenopsis banisteriae* Hansf., Sydowia **10**: 43. 1957.

Cols. amphigenous, to 5 mm. diam. or numerous and confluent, thin, smooth. Hyphae substraight to undulate, cells mostly 13—20×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or very rarely opposite, antrorse or spreading, straight or bent, 16—23 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with rounded apex, entire, often bent, 12—17×8—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—22×7—9 μ. P.

scattered, verrucose, to 160 μ diam.; ps. 2—12, erect-spreading, straight, simple, obtuse, 0—2-septate, dark brown, to 180×8—9 μ, the upper half finely dark-granulose to scabrid, often slightly bent at apex. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—44× 16—20 μ.

On *Banisteria laurifolia*, Porto Rico, Whetzel 3286 (type), Chardon 860, 885 (CUP), Stevens 7358, 7564, 4392-a, 4384, 4852, 9298 (P, CUP, FLS).

(415) *Irenopsis stuhlmanniana* (P. Henn.) Hansf., Sydowia **10**: 45. 1957.

= *Meliola stuhlmanniana* P. Henn., Englers Bot. Jahrb., **34**: 45. 1904.

= *Meliola acridocarpi* Doidge, Bothalia **4**: 195. 1941.

Cols. epiphyllous, dense, smooth, to 3 mm. diam. or numerous and confluent. Hyphae substraight, cells mostly 15—30×6—9 μ, branching opposite or irregular, acute, densely reticulate and nearly solid in centre. Ch. alternate, antrorse, straight, 20—25 μ long; stc. cuneate to cylindric, 5—8 μ long; hc. globose, ovate or rarely rounded-angulose, 13—18×12—16 μ. Mh. mixed with ch., or sometimes separate, opposite or alternate, ampulliform, 16—20×7—9 μ. P. scattered, verrucose, to 180 μ diam.; ps. 5—14, erect-spreading from upper half of P., straight or slightly bent to sub-uncinate at obtuse apex continuous, to 160×8—10 μ thick below, slightly attenuate upwards to 5—7 μ at apex, dark brown below, lighter at apex and finely dark-granulose to almost scabrid. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 38—48×17—19 μ.

On *Acridocarpus* sp., Tanganyika, Stuhlmann, type (S); — On *A. natalitius*, South Africa, Medley Wood 575 (PRET, K), type of *M. acridocarpi*.

(416) *Irenopsis malpighiicola* Hansf., Sydowia **9**: 2. 1955.

Cols. hypophyllous, thin to subdense, to 1 mm. diam., or numerous and confluent. Hyphae growing between and under the stellate leaf-hairs, undulate to crooked, cells 20—30×7—9 μ, branching opposite or irregular, closely reticulate in oder colonies. Ch. alternate, straight or bent, spreading, 20—27 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. globose to widely piriform, entire or sometimes slightly rounded-angulose, 15—20×12—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×6—9 μ. P. scattered, verrucose, to 190 μ diam.; ps. 2—12, erect-spreading from upper half of P., up to 140×6—7 μ, simple, obtuse, 1—2-septate, the apex often spirally contorted, surface loosely dark asperate, wall 1—2 μ thick. Sp. cylindric, obtuse or slightly apiculate, 4-septate, constricted, 45—53×16—19×13—15 μ.

On *Malpighiaceae* indet., Brazil, Ule, Herb. brasil. 479 p. p., type (S, P).

(417) *Irenopsis acridocarpicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 18. 1948.

Cols. amphigenous, very thin and scarcely visible, to 5 mm. diam. Hyphae substraight, cells mostly 25—35×5—7 μ, branching opposite at wide angles, very loosely reticulate. Ch. alternate or thinly scattered, sometimes very distant, 12—17 μ long, usually straight and spreading; stc. cylindric, 2—5 μ long; hc. globose, entire, 10—13 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 14—17× 7—8 μ. P. loosely scattered, each on radiate subiculum of hyphae up to 120 μ long, verrucose, to 170 μ diam.; ps. 6—10, radiating to spreading, straight below, obtuse, dark brown, 4-septate, apex obtuse, hamate to uncinate, wall thin and dark granulose in upper part. Sp. oblong to subellipsoid, obtuse, 4-septate, 38—47×17—19 μ.

On *Acridocarpus plagiopterus*, Sierra Leone, Deighton 1208 (type), 2201.

(418) *Irenopsis circinata* Hansf., Sydowia **10**: 43. 1957.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. Hyphae undulate, cells mostly 35—50×6—7 μ, branching remote, opposite or irregular, acute, loosely radiating-reticulate. Ch. alternate, mostly bent, 12—17 μ long, spreading or antrorse; stc. cylindric to cuneate, 2—4 μ long; hc. ovate, usually bent and wider than long, sometimes rounded-angulose, 10—12×12—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform 16—20×6—8 μ. P. loosely scattered, slightly verrucose, to 150 μ diam.; ps. 3—8, erect, circinate to hamate, obtuse, continuous, pale brown, to 50×10—12 μ, slightly swollen towards apex, surface slightly rough. Sp. oblong, obtuse, 4-septate, slightly constricted, 27—35×11—13 μ.

On *Stigmatophyllum convolvulifolium*, Trinidad, Baker 1815, type 1899 (IMI 23469, 27656).

On *Stigmatophyllum convolvulifolium*, Trinidad, Baker 1815, type 1899 (IMI 23469, 27656).

(418-a) *Irenopsis triaspidis* Deighton, Sydowia **11**: 98. 1958.

Cols. amphigenous, mostly epiphyllous, subdense, to 1.5 mm. diam. or confluent. Hyphae substraight to sinuous,branching opposite opposite at wide angles, closely reticulate, cells 20—30×6—8 μ. Ch. alternate, straight, spreading or antrorse, 16—23 μ long; stc. cylindric, 4—7 μ long; hc. subglobose to clavate, entire, 12—16× 12—14 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform to corniform, 16—25×5—8 μ. P. scattered, verrucose, to 200 μ diam.; ps. 0—4, straight below, tortuous to hamate above, obtuse, 0—1-septate, 45—65×7—8 μ, inflated up to 10 μ at apex, granulose above. Sp. oblong, obtuse, 4-septate, constricted, 33—40× 14—16×12—13 μ.

On *Triaspis stipulata*, Nigeria, Keay et al. in IMI 63582, type.

In hypophyllous colonies the hyphae are more sinuous; ch. slightly longer and sometimes bent, with hc. versiform.

(419) **Asteridiella stellata** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) stellata* Cif., Mycopathologia **7**: 187. 1954.

Cols. epiphyllous, scattered or confluent, 2—5 mm. diam. Hyphae substraight, branching opposite at wide angles, loosely reticulate, 6—8 μ thick. Ch. alternate or rarely opposite, spreading or subantrorse, straight or slightly bent; stc. cylindric, 3—6 μ long; hc. globose to ovate, entire, 16—22×10—12 μ, rarely irregular or lobate. Mh. mixed with ch., opposite or rarely unilateral, ampulliform, 15—19× 6—8 μ. P. verrucose, to 180 μ diam., surface cells conoid. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 40—44×11—18 μ.

On *Stigmatophyllon lingulatum*, San Domingo, Ekman 3343, type.

Material of this species has not become available to the present author. Ciferri also mentioned a second collection, Ekman 2757, on the same host, as having more irregular hc., and spores 50—55 μ long; to me this sounds like a distinct species, or at least a separate variety.

(420) *Asteridiella stigmatophylli* (Petr.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola stigmatophylli* Petr., Ann. Mycol. Berlin **27**: 4. 1929. (ex errore *stigmaphylli*).

Cols. mostly epiphyllous, to 3 mm. diam., thin to subdense, smooth. Hyphae substraight to undulate, branching opposite, acute to wide, loosely to closely reticulate, cells mostly 15—25×5—7 μ. Ch. alternate, subantrorse, straight or slightly bent, 15—22 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose to piriform, entire, 10—16×12—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. P. in central group, verrucose, to 230 μ diam., surface cells obtusely rounded to conoid, to 15 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 33—40×13—16 μ.

On *Stigmatophyllon ellipticum*, Costa Rica, Brenes 559, 239 (F).

(421) *Asteridiella cuspidata* (Cif.) Hansf., Sydowia **10**: 47. 1957.

= *Meliola cuspidata* Cif., Ann. Mycol. Berlin **29**: 286. 1931.

Cols. dense, epiphyllous, to 6 mm. diam., rarely amphigenous. Hyphae slightly undulate, cells mostly 15—25×6—8 μ, branching irregular, acute, densely radiating-reticulate. Ch. alternate, straight or antrorse-bent, 19—25 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. rounded-angulose to shallowly lobate, straight or bent, 14—19× 10—14 μ. Mh. mixed with ch., opposite or alternate, 15—20×5—7 μ. P. scattered, verrucose, to 180 μ diam., on a dense radiate plate of mycelium, simulating those of Amazonia, globose when mature; surface cells rounded to obtusely conoid. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 40—45×15—19 μ.

On *Bunchosia glandulosa*, San Domingo, Ciferri, Mycofl. doming. exs. 54, type, Ciferri 2804, 3294.

(422) **Asteridiella ozamensis** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) ozamensis* Cif., Mycopathologia **7**: 166. 1954.

Cols. indefinite, epiphyllous, 2—5 mm. diam. or confluent. Hyphae little branched, 4 μ wide, septate with irregular cells. Ch. alternate, irregularly lobate, hc. globose or subglobose, 11—15 μ diam. or 10—16×10—13 μ, stc., 2—4 μ long. Mh. ampulliform, 12—18×6—8 μ. Setae none. P. glabrous, to 180 μ diam. Sp. 4-septate, constricted, 30—35×12—17 μ.

On *Stigmatophyllon angulosum*, San Domingo, Ciferri 2757, type.

Material of this species has not been available to the present author.

(423) *Meliola crenata* Wint. in Gaill., Le Genre *Meliola*, 1892, p. 105.

Cols. hypophyllous, thin, hidden by the leaf hairs, to 3 mm. diam. Hyphae undulate to crooked, branching opposite at varying angles, loosely to closely reticulate-interwoven, cells mostly 20—30× 4.5—6 μ. Ch. alternate or opposite, spreading, straight or bent, 13—19 μ long; stc. cylindric, 4—8 μ long; hc. ovate to oblong, entire, often bent, 9—14×7.5—9.5 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. thinly scattered and grouped around P., more or less flexuous, to 270×6—7.5 μ, apex 2—3-dentate to 7 μ, the teeth thick and obtuse. P. scattered, verrucose, to 190 μ diam. Sp. oblong to narrowly subellipsoid, obtuse, 4-septate, constricted, 47—56×14—17 μ, the central cell usually slightly the largest.

On *Malpighiaceae* indet., Brazil, Ule 479, type (Herb. Patouillard in F).

(424) *Meliola crenata* Wint. var. *bunchosiae* Hansf., Sydowia Beih. 1: 105. 1957.

Cols. amphigenous, thin, slightly velvety, to 5 mm. diam. or confluent. Hyphae substraight, branching opposite and acute, loosely interwoven-reticulate, cells mostly 25—40×5—6 μ. Ch. opposite or alternate, spreading, straight or slightly bent, 14—20 μ long; stc.. cylindric, 3—9 μ long; hc. ovate, entire, 10—13×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—26×6—7 μ, neck elongate. Ms. fairly numerous, scattered and grouped around P., straight or slightly flexuous, to 290×7—8 μ, apex somewhat swollen and with 2—4 obtuse teeth to 10 μ long. P. scattered, verrucose, to 165 μ diam. Sp. subfusoid with attenuate-rounded ends, slightly bent, 4-septate, very slightly constricted, 40—50×11—13×9—10 μ.

On *Bunchosia cornifolia*, Panama, Stevens 496, type (FLS).

(425) *Meliola crenato-furcata* Syd., Ann. Mycol. **14**: 77. 1916.

Cols. hypophyllous, effuse, thin, to 20 mm. diam. or confluent. Hyphae straight or slightly undulate, cells 20—35×7—9 μ, branching

opposite at wide angles, loosely reticulate. Ch. alternate or to 50% opposite, spreading or variously bent, 16—24 μ long; stc. cylindric, 3—5 μ long; hc. cylindric, straight or bent, entire, 12—18×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×7—9 μ. Ms. numerous, scattered, straight, to 350×7—10 μ, apex crenate-denticulate or 2—4-furcate to 12 μ and branches denticulate. P. scattered, to 180 μ diam., verrucose. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 35—40×15—17×13—14 μ.

On *Malpighiaceae* indet., Brazil, Ule, Herb. brasil. 3480, type (S).

(426) *Meliola xenoderma* Syd., Ann. Mycol. 24: 311. 1926.

Cols. hypophyllous, thin, to 10 mm. diam. Hyphae substraight to slightly flexuous, cells mostly 30—50×5—9 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or about 3% opposite, spreading or variously bent, 18—25 μ long; stc. cylindric 4—10 μ long; hc. entire, ovate to clavate, rarely straight, usually sharply bent forwards or backwards, 11—16×8—10 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 17—23×6—8 μ. Ms. numerous, scattered, usually somewhat flexuous, to 300×7—10 μ, apex rarely simple and obtuse, usually 3—5-dentate to 8 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong-fusoid with attenuate-rounded ends, straight or slightly bent, 4-septate, 42—52×13—15 μ.

On *Malpighia glabra*, Costa Rica, Sydow, Fung. exot. exs. 624, type, Sydow, Fung. costaric. 184.

(427) *Meliola malpighiacearum* Hansf., Sydowia 9: 19. 1955.

Cols. amphigenous, thin, 1 mm. diam. or confluent. Hyphae sinuous to crooked, cells mostly 25—40×6—7 μ, branching opposite at wide angles, loosely radiating-reticulate. Ch. alternate, subantrorse, 16—27 μ long, mostly straight; stc. cuneate to cylindric, 3—10 μ long; hc. ovate to narrow piriform, entire, 12—18×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. mostly grouped around P., straight or slightly bent, to 250×7—8 μ, apex simple and obtuse, or more often dentate to 6 μ, rarely 2-furcate to 15 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 31—36×13—14×11—13 μ.

On *Malpighiaceae* indet., Brazil, Ule, Herb. brasil. 1835, type.

(428) *Meliola byrsonimina* Stev. & Tehon, Mycologia 18: 10. 1926.

Cols. amphigenous, minute, dense. Hyphae straight, or on lower surface sinuous to crooked, cells mostly 14—20×8—10 μ, branching opposite at wide angles, densely reticulate, in places nearly solid. Ch. opposite or alternate in varying proportions, straight or bent, spreading or antrorse, 18—24 μ long; stc. cylindric, to cuneate, 3—8 μ long; hc. subglobose, ovate or bent, entire (on lower surface often somewhat irregularly rounded-angulose), 12—17×11—15 μ. Mh. mixed with ch., often numerous, opposite or alternate, ampulliform,

20—27×8—11 μ, neck elongate. Ms. few, mostly around P., substraight, simple, obtuse, to 450×10—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—49× 19—22×14—17 μ.

On *Byrsonima* sp., British Guiana, Stevens 106, type (F); — On *Malpighia biflora*, San Domingo, Ciferri 2748 (S); — On *Malpighiaceae* indet., Brazil, Ule in Rab.-Wint., Fung. euro0p. 3438 p. p.

(429) *Meliola cibaoensis* Hansf., Sydowia 9: 12. 1955.

Cols. epiphyllous, thin, effuse and spreading, often confluent. Hyphae substraight, cells mostly 20—40×6—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate or about 2% opposite, straight or sometimes sharply bent, 15—23 μ long; stc. cylindric, 3—7 μ long; hc. from subglobose to rounded-angulose and sublobate or rather irregular, 11—19×8—12 μ. Mh. mixed with ch. on special branches with shorter cells, opposite or alternate, ampulliform, 15—23×7—9 μ. Ms. mostly grouped around P., straight or slightly bent, simple, acute, to 800×9—11 μ. P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—42×14—17×12—14 μ.

On *Byrsonima spicata*, San Domingo, Ciferri, Mycofl. doming. exs. 46-bis, 46-ter (type).

(430) *Meliola byrsonimicola* Stev. & Tehon, Mycologia 18: 10. 1926.

Cols. mostly hypophyllous, small, dense, often confluent. Hyphae substraight to coroked, especially on lower surface, cells mostly 20—35×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or slightly bent, spreading, 17—25 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. globose to ovate, entire, 14—21×12—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 23—28×10—12 μ, neck elongate. Ms. mostly grouped around P., to 700×10—12 μ, straight, simple, obtuse. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 44—52× 18—21 μ.

On *Byrsonima* sp., British Guiana, Stevens 333 (type), 363, 1015; Trinidad, Thaxter 7470 (F); — On *B. laurifolia*, Brazil, Baker s. n. (S); — On *B. crassifolia*, Trinidad, ICTA 387; — On *B. verbascifolia*, Trinidad, ICTA 980.

(431) *Meliola byrsonimae* Stev., Illinois Biol. Monogr. 2: 517. 1916.

Cols. epiphyllous, to 5 mm. diam., thin. Hyphae straight or slightly undulate, cells mostly 35—50×8—10 μ, branching irregular at wide angles, loosely reticulate. Ch. alternate, distant, subantrorse, straight or bent, 28—35 μ long; stc. cuneate to cylindric, 7—13 μ long; hc. clavate to ovate, sometimes slightly rounded-angulose, 18—25×15—18 μ. Mh. separate, opposite or alternate, ampulliform, 20—27×8—11 μ. Ms. few, scattered, straight, or slightly bent, to 1000×10—12 μ, simple, apex obtuse or acute. P. scattered, verrucose,

to 160 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—56×18—23×15—17 μ.

On *Byrsonima lucida*, Porto Rico, Stevens 3541, type.

(432) *Meliola byrsonimae* Stev. var. *minor* Hansf., Sydowia 10: 66. 1957.

Cols. epiphyllous, subdense, to 3 mm. diam., subvelvety. Hyphae straight, cells mostly 25—30×8—9 μ, branching opposite at wide angles, closely reticulate, subsolid in centre. Ch. alternate, spreading or antrorse, usually slightly bent, 18—26 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. usually bent, ovate to clavate, entire, 13—18×10—17 μ. Mh. few, mixed with ch., opposite, ampulliform, 20—25×9—11 μ. Ms. scattered, straight, simple, obtuse to acute, to 1000×8—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—47×16—18 μ.

On *Byrsonima crassifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 46, (type), Ciferri 2696, 2714 (S), Petrak, Mycoth gener. 1441; Panama, Standley 29027 (F), Stevens 888, 159 (FLS), F); — On *B. spicata*, San Domingo, Ciferri, Mycofl. doming. exs. 46-bis, 46-ter. (in both these mixed with *M. cibaoensis*); — On *B. sericea*, Brazil, IMUR 18, 273.

Host Family 135. Erythroxylaceae.

(432-a) *Amazonia erythroxyli* Hansf., Sydowia **11**: 46. 1957.

Cols. mostly epiphyllous, dense, smooth, to 1 mm. diam., or numerous and confluent. Hyphae substraight to undulate, branching opposite or irregular, at wide angles, closely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate, subantrorse, straight or bent, 16—25 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. piriform, subentire to rounded-angulose, or rarely irregular, 11—17×11—15 μ. Mh. mixed with ch., numerous, opposite or alternate, ampulliform, 18—22×7—10 μ. P. few, flattened-globose, covered by a radiate layer of mycelium, not or slightly fimbriate at the margin, to 300 μ diam. and to 100 μ high in centre, smooth. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 37—45×15—19 μ.

On *Erythroxylum* sp., Jamaica, Thaxter 7427 (type), 7206, 7207, 7426, 7080 (F).

(433) **Asteridiella erythroxylonis** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) erythroxylonis* Cif., Mycopathologia **7**: 127. 1954.

Cols. epiphyllous, to 7 mm. diam. or confluent, crustose-radiate. Hyphae straight to tortuous, 9—11 μ thick. Ch. alternate or unilateral, 15—29 μ long; stc. 3—10 μ long; hc. versiform, globose, ovate or irregularly lobate, always angulose, 10—18×10—13 μ. Mh. numerous, conoid to ampulliform, 15—22×6—8 μ. P. globose,

to 140 μ diam. Sp. oblong to ellipsoid with narrowed ends, 4-septate, constricted, 36—40×21—24 μ.

On *Erythroxylum urbanii*, San Domingo, Ekman s. n., type (not seen by present author).

(434) *Meliola erythroxylifoliae* Batista & Vital, Ann. IV Congr. Soc. Bot. Brazil, p. 105. 1953.

Cols. epiphyllous, thin, to 2 mm. diam. or widely confluent. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells 18—35×7—8 μ. Ch. alternate, spreading or subantrorse, straight or slightly bent, 15—22 μ long; stc. cuneate to cylindric, 4—6 μ long; hc. globose to piriform, entire, 12—15×11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—22×6—8 μ. Ms. scattered, straight, simple, acute, to 230 ×6—8μ. P. scattered, verrucose, to 190 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—42×15—17 μ, the central cell sometimes slightly the largest.

On *Erythroxylum* sp., Brazil, Batista & Vital in IMUR 11071, type.

Host Family 136. Euphorbiaceae.

Synopsis af accepted species of *Meliolineae:*

Amazonia

3101.4230 Cols. thin to dense; hyphae undulate; hc. ovate-piriform, entire ..... *tetrorchidii* (435)

Appendiculella

3201.6330 Cols. dense, crustose; hc. ovoid to globose, large, entire or angulose; app. ro 160 × 35 μ, apex involute, annulatestriate, smooth ..... *cornu-caprae* (436)

3201.5330 Cols. subdense; hc. ovate-piriform, entire; app. numerous, to 80 × 25 μ, striate, bent at apex ..... *uapacicola* (437)

3203.5320 Cols. subdense; hc. ovoid to angulose; app. 4—8, to 85 × 20 μ, curved at tip, striate, smooth ..... *arecibensis* (438)

3201.4220 Cols. dense; hc. globose; app. 2—4, to 65 × 25 μ, smooth, striate ..... *alchorneae* (439)

3203.3220 Cols. thin to subdense; hc. clavate, entire to angulose; app. to 75 × 30 μ, striate, smooth, bent at apex ..... *larviformis* (440)

Irenopsis

All known species on Euphorbiaceae have thin colonies with hyphae from sinuous to flexuous or crooked; all setae are continuous and obtuse, save for *I. hurae.*

3301.4330 Hc. large, lobate; ps. 0—10, to 130 μ, smooth, bent to uncinate ..... *omphaleae* (441)

3301.4320 hc. lobate, versiform; ps. 3—7, to 110 μ, asperulate above ..... *macarangae* (442)

3401.4220 hc. globose, large; ps. 0—8, substraight, smooth, to 90 μ ..... *paulensis* (443)

3301.4230 hc. subglobose to piriform, entire or subangulose; ps. 2—9, uncinate or contorted above, obtuse, granulose to asperate, to 105 μ *heveae* (443)

3301.3220 hc. globose, entire, small; ps. 3—5, hamate, to 90 μ ..... *crotonis* (444)

3¾01.3220 hc. globose; ps. 3—10, flexuous, to 140 μ, 2-3-septate, asperulate above, obtuse ..... *hurae* (445)

Asteridiella

3103.3220 Cols. thin; hyphae tortuous; hc. ovate to oblong, entire..... *funebris* (446)

3102.4220 Cols. dense; hyphae substraight; hc. subglobose; P-cells conoid-mammillate, to 15 μ high . *acalyphae* (447)

3101.5330 Cols. thin; hyphae crooked; hc. large, angulose; P-cells conoid-mammillate, to 35 μ ..... *malloti* (448)

3101.5320 Cols. thin; hyphae undulate; hc. large, oblong, entire; P-cells obtuse conoid..... *alchorneae-incurvae* (449)

3101.4230 Cols. dense; hyphae crooked; hc. ovate to angulose; P-cells conoid, to 18 μ ..... *verrucosa* (450)

3101.4230 Cols. dense; hyphae straight or undulate; hc. piriform to angulose; P-cells conoidmammillate, to 35 μ high..... *entebeensis* (451)

3101.4320 Cols. dense; hyphae substraight; hc. lobate; P-cells conoid, to 25 μ high ..... *entebeensis* var. *codiaei* (452)

3101.4220 Cols. thin; hyphae crooked; hc. small, piriform, entire; P-cells conoid, to 20 μ ..... *subapoda* (453)

3101.4220 Cols. thin; hyphae sinuous; hc. large, ovate to angulose ..... *malloticola* (454)

3101.4220 Cols. thin; hyphae undulate to crooked; hc. oblong to angulose ..... *cleistanthi* (455)

3101.4220 Cols. thin; hyphae substraight to sinuous; hc. stellate-lobate; P-cells conoid, to 20 μ..... *antidesmatis* (456)

3101.4220 Cols. dense; hyphae finely sinuous; hc. angulose to sublobate..... *drypeticola* (457)

3101.4220 Cols. very thin; hyphae substraight; hc. subglobose to piriform, entire..... *sapii* (458)

3101.4210 Cols. thin; hyphae undulate; hc. ovate to subangulose; ..... *verrucosa* var. *pedilanthi* (459)

3101.3220 Cols. thin; hyphae substraight; hc. small, subglobose, entire ..... *phyllanthi* (460)

3101.3220 Cols. thin; hyphae undulate to crooked; hc. ovate to angulose, small ..... *erythrococcae* (461)

3101.3220 Cols. thin; hyphae straight to flexuous; hc. ovate to angulose; P-cells obtuse conoid, to 15 μ high ..... *hansfordii* (462)

3101.3220 Cols. dense; hyphae sinous to flexuous; hc. piriform to angulose; P-cells conoid, to 25 μ high..... *hansfordii* var. *densa* (463)

Meliola

3143.5231	Cols. caulicolous, dense, velvety; hyphae straight; hc. globose, entire; ms. 2-3-dichotomous	*ugandensis*	(464)
3141.4221	Cols. dense, subvelvety; hyphae undulate; hc. lobate; ms. 2-3-dichotomous	*chandleri*	(465)
3141.4221	Cols. thin; hyphae crooked; hc. globose to ovate, entire; ms. 2-4-furcate	*crotonicola*	(466)
3¾1.4223	Cols. subdense, velvety; hyphae undulate; hc. ovate to lobate; ms. 2-furcate or dentate	*acalyphidis*	(467)
3133.4221	Cols. thin; hyphae substraight; hc. globose; ms. variously dentate	*janeirensis*	(468)
3133.3223	Cols. thin; hyphae straight to undulate; hc. small, globose; ms. 2-4-dentate to 5 μ	*micropoda*	(469)
3133.3222	Cols. thin; hyphae straight to undulate; hc.		
3133.3222	Cols. thin; hyphae straight to undulate; hc. ovate-globose, entire; ms. 2-3-dentate to 10 μ, rarely simple, acute	*brevidentata*	(470)
3131.4221	Cols. dense; hyphae sinouus; hc. oblong-clavate, entire; ms. 2-5-dentate to 15 μ	*janeirensis* var. *ricinodendri*	(471)
31⅓3.5333	Cols. thin to dense, velvety; hyphae substraight to sinuous; hc. oblong, entire; ms. acute or dentate	*jamaicensis*	(472)
31⅓1.4222	Cols. thin; hyphae undulate; hc. globose, entire; ms. obtuse, subacute or 2-4-dentate	*alchorneae*	(473)
31⅓1.3223	Cols. thin; hyphae crooked; hc. subglobose, entire; ms. obtuse or dentate	*brideliae*	(474)
31⅓1.3222	Cols. thin; hyphae substraight; hc. subglobose, entire; ms. obtuse, subacute or dentate	*crotonis-macrostachydis*	(475)
3123.5222	Cols. dense, velvety; hyphae substraight; hc. small, globose, entire; ms. broadly arcuate to uncinate, obtuse to subacute	*cladophaga*	(476)
3123.3221	Cols. subdense; hyphae substraight; hc. globose, entire; ms. obtuse, flexuous to uncinate-hamate	*manihoticola*	(477)
3121.5222	Cols. velvety; hc. globose, entire; ms. falcate, obtuse	*cluytiae*	(478)
31½3.4222	Cols. dense; hyphae straight or flexuous; hc. oblong, entire; ms. straight or falcate, obtuse	*euphorbiae*	(479)
3113.6322	Cols. dense, velvety; hyphae crooked; hc. clavate to lobate; ms. acute	*macarangicola*	(480)
3113.53×3	Cols. thin to subdense; hyphae substraight; hc. oblong, entire; ms. acute	*excoecariicola*	(481)
3113.4232	Cols. dense, velvety; hyphae substraight; hc. ovate-piriform, entire; ms. obtuse to subacute	*petalostigmatis*	(482)
3113.4222	Cols. dense, velvety; hyphae substraight; hc. subglobose to oblong, entire; ms. acute	*galeariae*	(483)
3113.4222	Cols. thin; hyphae straight; hc. cylindric, entire; ms. obtuse to subacute	*tetrorchidiicola*	(484)
3113.4221	Cols. dense, velvety, crustose; hyphae substraight; hc. globose to oblong, entire, ms. obtuse	*homalanthi*	(485)

3113.4221	Cols. thin to dense; hyphae straight; hc. globose to oblong, entire; ms. obtuse to acute	*homalanthi* var. *oldfieldiae*	(486)
3113.3223	Cols. thin, subvelvety; hyphae straight; hc. small, cylindric, entire; ms. acute	*luzonensis*	(487)
3113.3222	Cols. dense, subvelvety; hyphae sinuous to substraight; hc. globose, entire; ms. acute	*hymenocardiae*	(488)
3113.3221	Cols. subdense; hyphae straight or sinuous; hc. small, globose, entire; ms. acute	*brachypjda*	(489)
3113.3221	Cols. thin; hyphae substraight; hc. ovate to globose, entire; ms. obtuse	*gymnanthicola* var. *manihot*	(490)
3113.3221	Cols. subdense; hyphae substraight to undulate; hc. small, globose; ms. obtuse	*phyllanthicola*	(491)
3111.....	Setae obtuse:		
.5334	Cols. dense, velvety; hc. cylindric-clavate, entire, large	*teke*	(492)
.5323	Cols. subdense, velvety; hyphae crooked; hc. subglobose-ovate to angulose;	*macarangae* var. *longiseta*	(493)
.4333	Cols. dense; hyphae straight or undulate; hc. ovoid-oblong, entire	*kansireiensis*	(494)
.4322	Cols. thin; hyphae straight, cells long; hc. piriform-cylindric, entire	*argomuellerae*	(495)
.4322	Cols. dense; hyphae straight to sinuous; hc. piriform to sublobate, large	*alchorneicola*	(496)
.4231	Cols. thin; hyphae undulate; hc. ovate	*heveae*	(497)
.4223	Cols. subdense, velvety; hyphae undulate; hc. ovate to piriform, entire	*sauropicola*	(498)
.4221	Cols. subdense, velvety; hyphae crooked; hc. clavate to angulose	*brideliicola*	(499)
.3221	Cols. thin; hyphae substraight with long cells; hc. subglobose, entire	*ramosii*	(500)
.3221	Cols. dense; hyphae substraight; hc. ovoid ot oblong	*gymnanthicola*	(502)
.3221	Cols. dense to crustose; hyphae sinuous; hc. piriform to subangulose, large	*maesobotryae*	(501)
.3221	Cols. thin; hyphae undulate; hc. stellatelobate	*anfracta*	(503)
3111.....	Setae acute:		
.5334	Cols. dense, velvety; hyphae straight; hc. large, piriform or subangulose	*mauritiana*	(504)
.5322	Cols. dense, velvety; hyphae crooked; hc. ovate to angulose	*macarangae*	(505)
.5232	Cols. subdense; hyphae undulate; hc. ellipsoid to sublobate	*glochidiicola*	(506)
.5221	Cols. dense, velvety; hyphae substraight to crooked; hc. versiform, angulose to lobate	*macarangae* var. *apayaoensis*	(507)
.4232	Cols. thin; hyphae undulate; hc. piriform to angulose	*colliguajae*	(508)
.4231	Cols. thin; hyphae substraight; hc. oblong, entire	*perae*	(509)
.4222	Cols. dense; hyphae straight to undulate; hc. irregularly lobate	*excoecariae*	(510)

.4222	Cols. thin, subvelvety; hyphae substraight to undulate, cells long; hc. subglobose, entire ..	*longispora*	(511)
.4222	Cols. dense; hyphase substraight; hc. large, angulose-irregular	*hippomaneae*	(512)
.4221	Cols. dense; hyphae sinuous to crooked; hc. subglobose to lobate	*bougheyana*	(513)
.4221	Cols. dense, velvety; hyphae crooked; hc. ovoid to cuneiform, entire	*glochidii*	(514)
.4221	Cols. dense, subvelvety; hyphae sinuous; hc. ovate to sublobate	*serdangensis*	(515)
.3224	Cols. thin, subvelvety; hyphae straight to crooked; hc. subglobose, entire.....	*crotonis-nigritani*	(516)
.3222	Cols. thin; hyphae undulate; hc. ovoid, entire	*jatrophae*	(517)
.3222	Cols. thin; hyphae substraight; hc. ovate, entire.....	*jatrophae* var. *adeliae*	(518)
.3221	Cols. dense; hyphae substraight; hc. oblong-ovoid, entire.....	*morbosa*	(519)

(435) *Amazonia tetrorchidii* Hansf., Mycol. Paper, IMI, **23**: 19. 1948.

Cols. amphigenous, to 2 mm. diam., or confluent, thin to dense, and almost solid after perithecial development. Hyphae substraight to undulate, cells 15—20×6—7 μ, branching alternate, close, acute, becoming densely radiating-reticulate. Ch. alternate, antrorse or spreading, usually straight, 14—20 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. subglobose to cylindric or piriform, entire, 10—13×7—9 μ. Mh. few, mixed with ch., opposite or more often alternate, conoid to ampulliform, 17—22×7—9 μ. P. closely scattered, flattened globose beneath a radiate mycelial covering layer, slightly fimbriate at the edge with short exhypopodiate hyphae, 200—280 μ diam., opening irregularly and rather widely at centre when mature. Sp. oblong, obtuse, 4-septate, deeply constricted, 35—45×16—19 μ.

On *Tetrorchidium didymostemon*, Uganda, Hansford 3492 (type), 3625, 3673; Sierra Leone, Deighton 1956, 1957, 2029.

On *Euphorbia clusiaefolia*, Hawaii, Stevens 7, 202, 212.

(436) *Appendiculella cornu-caprae* (P. Henn.) Hoehn., Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **128**: 556. 1919.
= *Meliola cornu-caprae* P. Henn., Hedwigia **43**: 362. 1904.
= *Irene cornu-caprae* (P. Henn.) Stev., Ann. Mycol. **25**: 426. 1927.

Cols. caulicolous, rounded or effuse, crustose, dense. Hyphae sinuous to crooked, branching opposite or irregular, densely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or more scattered, spreading usually irregularly bent, 30—70 μ long stc. cylindric, often 1-septate near distal end, and there sometimes expanded, usually irregularly bent, 10—50 μ long; hc. ovoid, globose, or irregularly rounded-angulose, 20—28×20—25 μ. Mh. mixed with ch., alternate or opposite,

conoid to ampulliform, 15—22×7—9 μ. P. scattered or in loose central group, globose, to 300 μ diam., surface slightly verrucose; app. 3—8, erect-spreading, subcylindric with involute apex, obtuse, to 160× 25—35 μ diam. at base, 10—15 μ wide at apex, transversely striate and usually dark-annulate, surface smooth, thin-walled, pale brown to subhyaline, continuous. Sp. ellipsoid, obtuse, 4-septate, 50—60× 23—27×18—20 μ, constricted.

On *Euphorbiaceae* indet., Brazil, Ule, Herb. brasil. 2971, type (S, K).

(437) **Appendiculella uapacicola** (Hughes) Hansf., comb. n.

= *Irenina uapacicola* Hughes, Mycol. Paper, IMI 50:30. 1953.

Cols. hypophyllous, subdense, to 12 mm. diam. Hyphae flexuous to substraight, cells mostly 21—35×6—8 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate, subantrorse, straight or bent, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to piriform, 11—16×9—12 μ. Mh. scattered amongst ch., opposite or alternate, ampulliform to conoid, 24—29×6—8 μ, neck elongate. P. scattered, globose, to 240 μ diam.; app. numerous, to 80×28 μ diam. at base, conoid-cylindric and attenuate to 8 μ at obtuse, straight or bent apex, brown to dark brown, continuous, transversely striate, smooth, thin-walled. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 54—59×20—25 μ, the middle cell often distinctly the largest.

On *Uapaca* sp., Gold Coast, IMI 46780-a, type; — On *U. paludosa*, Cameroons, IMI 46782.

(438) *Appendiculella arecibensis* (Stev.) Toro, Mycologia **17**: 144. 1925.

= *Meliola arecibensis* Stev., Illinois Biol. Monogr. **2**: 491. 1916.

= *Irene larviformis* (P. Henn.) Stev. var. *arecibensis* Stev., Ann. Mycol. **25**: 425. 1927.

= *Appendiculella larviformis* (P. Henn.) Hoehnel var. *major* Hansf., Sydowia **9**: 30. 1955.

Cols. hypophyllous, to 3 mm. diam., also smaller on upper surface, dense, smooth. Hyphae substraight to sinuous, cells 10—20×6—8 μ, branching opposite or irregular at wide angles, closly reticulate and almost solid. Ch. alternate or to 10% opposite, subantrorse, often irregularly bent, 17—26 μ long; stc. cylindric, 2—8 μ long; hc. ovoid, oblong, cuneate or irregularly sublobate, often wsinuous or bent, 11—20×9—17 μ, versiform. Mh. numerous in centre, mixed with ch., opposite or alternate, ampulliform, 20—25×7—8 μ, neck elongate. P. loosely scattered, slightly verrucose, to 210 μ diam.; app. 4—8, erect, cylindric, tapering slightly to the obtuse, uncinate apex, translucent brown, thin-walled, continuous, to 100×20 μ thick at the base, apex slightly darker, whole wall faintly transversely striate. Sp. oblong to ellipsoid, obtuse, 4-septate, 44—51×18—20 μ.

On *Acalypha bisetosa*, Porto Rico, Stevens 365-a (type), 6547; — On *A. diversifolia*, Honduras, Standley 56839, 55320, 53662; Panama, Stevens 699, 1070; — On *A. cuspidata*, Venezuela, Chardon & Toro 692, Chardon 928; — On *A.* sp., Costa Rica, Stevens 328, 366; Panama, Stevens 689, 1291.

On *A. diversifolia* the colonies are strongly parasitic, producing a brown leafspot. It is probable that the earliest name for this species is *Appendiculella rimbachii* (Pat.) Hansf., but until the host of the type can be determined, it seems preferable to retain the two as separate. (cf. no 1785 below).

(439) **Appendiculella alchorneae** (Stev. & Tehon) Hansf., comb. n.

= *Irene alchorneae* Stev. & Tehon, Mycologia **18**: 21. 1926.

= *Irenina alchorneae* (Stev. & Tehon) Stev., Ann. Mycol. **25**: 452. 1927.

= *Meliola pseudoradiata* Cif., Mycopathologia **7**: 178. 1954.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae straight or undulate, branching opposite, acute to wide, closely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate or to 3% opposite, antrorse or spreading, straight or bent, 16—20 μ long; stc. cuneate, 2—5 μ long; hc. globose, entire, 11—15×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. P. scattered or loosely aggregate in centre of colony,verrucose, to 120 μ long; app. 2—4, sub-cylindric with obtuse, bent apex, subhyaline with brownish apex, smooth, continuous, thin-walled, to 65 μ long, about 25 μ diam. at base, attenuate to 13—15 μ above. Sp. ellipsoid, obtuse, 4-septate, constricted, 35—42×15—19 μ.

On *Alchornea* sp. British Guiana, Stevens 245, type (FLS).

(440) *Appendiculella larviformis* (P. Henn.) Hoehn., Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl., **128**: 556. 1919.

= *Meliola larviformis* P. Henn., Hedwigia **43**: 362. 1904.

= *Irene larviformis* (P. Henn.) Stev., Ann. Mycol. **25**: 425. 1927.

= *Irenina dalechampiae* Stev., Ann. Mycol. **25**: 449. 1927.

Cols. hypophyllous, to 2 mm. diam., subdense. Hyphae substraight to undulate or flexuous, cells 15—25×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or opposite in varying proportions, straight or bent, antrorse or spreading, 15—24 μ long; hc. wide ovate and entire, or mostly irregularly rounded-angulose to sublobate, often bent, 10—17×8—13 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform or conoid. P. scattered, or sometimes in loose central group, verrucose, to 170 μ diam.; app. few to numerous, erect-spreading, to 75—20×25 μ wide at base, subcylindric, slightly attenuate to obtuse, bent apex, continuous, thin-walled, transversely striate, smooth, translucent yellowish-brown to subhyaline below, darker at apex. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 30—35×14—17×11—13 μ.

On *Acalypha* sp., Peru, Ule, Herb. brasil. 3293, type (S); On *Dalechampia scandens*, Venezuela, Soltero 1545 (CUP); Ecuador, Stevens 153, 49 (type of *Irenina dalechampiae*).

(441) *Irenopsis omphaleae* Hansf., Sydowia **9**: 3. 1955.

Cols. amphigenous, very thin, spreading and confluent, smooth. Hyphae substraight to undulate, cells mostly 20—35×7—9 μ, branching opposite or irregular at varying angles, loosely reticulate. Ch. alternate, subantrorse, straight or bent. 22—30 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. from oblong to piriform and entire, or more commonly rounded-angulose to irregularly palmate-lobate, straight or bent, 18—23×10—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—40×6—9 μ, neck elongate. P. loosely scattered, globose, verrucose, to 215 μ diam.; ps. 0—10, erect-spreading, simple, obtuse, uncinate or bent at apex, smooth, continuous, thin-walled, to 130×7 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 45—50×22—25 μ.

On *Omphalea pauciflora*, San Domingo, Ciferri, Mycofl. doming. exs. 269 p. p., type.

(442) *Irenopsis macarangae* Hansf., Proc. Linn. Soc. London, **153**: 8. 1941.

Cols. hypophyllous, rather thin, to 8 mm. diam. or confluent. Hyphae sinuous to crooked, cells mostly 25—45×6—7 μ, branching irregular, loosely reticulate. Ch. versiform, straight or more often sharply bent, 20—35 μ long; stc. cylindric, straight or bent, sometimes geniculate, 6—20 μ long; hc. rarely clavate and entire, usually irregular and rounded-angulose to deeply lobate, versiform, 11—20×13—20 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 18—25×7—9 μ. P. scattered, globose, verrucose, to 160 μ diam.; ps. 3—7, erect-spreading,d ark brown, simple, obtuse, apex bent to uncinate, continuous, surface asperulate, to 110×6—8 μ, slightly attenuate upwards. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—45×17—20 μ.

On *Macaranga schweinfurthii*, Uganda, Hansford 2429 (type), 2577, 2983.

(443) *Irenopsis paulensis* Hansf., Proc. Linn. Soc. London **165**: 167. 1955.

Cols. epiphyllous, thin, minute, numerous and widely confluent. Hyphae substraight to crooked, cells 25—35×6—8 μ, branching opposite or irregular, loosely reticulate. Ch. alternate, mostly straight, 14—23 μ long; stc. cylindric to cuneate, 2—8 μ long; hc. globose to wide piriform, entire, 11—14×11—15 μ. Mh. mostly on special branches, but mixed with few ch., opposite or alternate, ampulliform to conoid, 15—20×8—10 μ. P. loosely scattered, globose, verrucose, to 170 μ diam., surface cells conoid, projecting to about 15 μ; ps. 0—8, erect-spreading, substraight below, obtuse, smooth, continuous,

translucent brown, to 90×6—7 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—40×14—16 μff.

On *Acalypha* sp., Brazil, Usteri 22, type (S); Usteri 44 (S).

(443-a) **Irenopsis heveae** Hansf., sp. n.

Plagulae epiphyllae, usque ad 4 mm. diam., tenues vel densae, leves. Hyphae brunneae, subrectae vel undulatae, opposite vel irregulariter, acute vel late ramosae, laxe vel dense reticulatae, cellulis plerumque 18—43×7—10 μ. Hyphopodia capitata alternata subantrorsa vel patentia, recta vel leniter curvata, 17—28 μ longa; cellula basali cuneata vel cylindracea, 5—17 μ longa; cellula apicali subglobosa, oblonga vel piriformi, integra vel interdum subangulosa, 11—17×11—14 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15—26×7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 220 μ diam.; setae peritheciales 2—9, erecto-patentes, deorsum rectae, sursum curvatae, subuncinatae vel saepius contortae, obtusae, brunneae, continuae, sursum granulosae vel asperatae, usque ad 105×8—9 μ. Sporae subellipsoideae, obtusae, atrobrunneae, 4-septatae, constrictae, 36—43×16—19×13—15 μ.

Hab. in foliis *Heveae brasiliensis*, Oromina Nursery, Peru, R. Russell 8001, type (USDA); Rio Chipurana, Peru, Stakman 162-c (USDA).

This does not appear to correspond to the description of *Meliola heveae* Vincens, of which the present author has not been able to obtain authentic material for comparison.

(444) *Irenopsis crotonis* (Stev. & Tehon) Stev.. Ann. Mycol. 25: 441. 1927.

= *Meliola crotonis* Stev. & Tehon, Mycologia **18**: 20. 1926.

Cols. amphigenous, thin, minute. Hyphae slightly undulate to flexuous, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, subantrorse, straight or slightly bent, 16—30 μ long; stc. cylindric to cuneate, 4—11 μ long; hc. ovate to piriform, entire, 10—17×9—11 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 14—20×6—7 μ. P. scattered or loosely aggregate, globose, verrucose, to 150 μ diam., ps. 2—8, erect-spreading, straight below, irregularly bent to uncinate at obtuse apex, continuous or doubtfully 1—2-septate, the upper part loosely and coarsely dark-asperate, wall 1.5—2 μ thick, brown, up to 130×6—7 μ. Sp. oblong, obtuse, 4-septate, constricted, 31—37×13—15 μ.

On *Croton* sp., Trinidad, Stevens 837, type (FLS); — On *C. verrauxii*, New South Wales, Fraser s. n., with straighter hyphae and smooth ps.; — On *C. populifolius*, Trinidad, ICTA 250, 414.

(445) *Irenopsis hurae* Syd., Ann. Mycol. 28: 56. 1930.

Cols. epiphyllous, very thin, arachnoid, to 5 mm. diam., smooth. Hyphae undulate, cells mostly 30—50×6—8 μ, branching opposite

at wide angles, very loosely reticulate. Ch. alternate or more scattered, straight or slightly bent, 15—22 μ long, more or less antrorse; stc. cuneate, 3—6 μ long; hc. globose to wide ovate or piriform, entire, 11—16×10—13 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, ampulliform, 15—23×6—8 μ, neck elongate. P. loosely scattered, globose, to 180 μ diam., verrucose, surface cells conoid, obtuse; ps. 3—10, pale brown, to 140×6—8 μ, straight, or irregularly bent to twisted-coiled at apex, 2—3-dseptate, smooth below, aperulate above, wall 2—3 μ thick, apex obtuse. sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 28—36×13—15×11—12 μ.

On *Hura crepitans*, Venezuela, Sydow, Fung. venez. 84, type (S); San Domingo, Ciferri, Mycofl. doming. exs. 159; Panama, Stevens 296, 843, 898, 812. (FLS).

Stevens reported his Panama collections as *I. crotonis*, on *Hoya* sp.

(446) *Asteridiella funebris* (Cif.) Hansf., Sydowia **10**: 48. 1957.
= *Meliola (Irenina) funebris* Cif., Ann. Mycol. **36**: 210. 1938.

Cols. epiphyllous, rarely amphigenous, archnoid-diffuse, or confluent, 10—15 mm. diam. Hyphae loosely reticulate, sparsely and irregularly branched, tortuous, 9—11 μ thick. Ch. few, opposite or rarely unilateral, 19—22 μ long; stc. 1—4 μ long; hc. ovate to oblong or ellipsoid, entire or more usually irregularly angulose to lobate, 16—20×9—13 μ. Mh. rare, mixed with ch., ampulliform, 14—19×8—10 μ. P. scattered, globose, to 160 μ diam. Sp. ellipsoid to oblong, obtuse to subacute, 4-septate, slightly constricted, 20—30×9—15 μ.

On *Omphalea pauciflora*, San Domingo, Ciferri, Mycofl. doming. exs. 269, type.

I have examined portions of the type collection in K, CUP and IMUR, and have failed to discover any sign of the above species on them; it is possible that other portions distributed by Ciferri may contain it, but until they are re-discovered, the species must remain wholly doubtful.

(447) *Asteridiella acalyphae* (Rehm.) Hansf., Sydowia **10**: 46. 1957.
= *Meliola acalyphae* Rehm, Philipp. Journ. Sci., C. Botany, 8: 252. 1913.
= *Amazonia acalyphae* (Rehm) Theiss., Ann. Mycol. **14**: 407. 1916.
= *Irenina acalyphae* Stev. & Rold., Philipp. Journ. Sci. **56**: 51. 1935.

Cols. amphigenous, mostly hypophyllous, to 1.5 mm. diam., dense, smooth. Hyphae substraight, cells mostly 10—15×7—10 μ, branching opposite or irregular, at wide angles, densely reticulate and becoming solid. Ch. densely crowded, opposite save where too crowded, spreading, usually straight, 15—20 μ long; stc. cylindric,

2—5 μ long; hc. subglobose, entire, 11—15×9—13 μ, often angular through crowding. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—10 μ. P. scattered, originating as radiate plates up to 120 μ diam., lateral on the hyphae and frequently towards the edges of the colony, finally becoming raised in centre and globose or somewhat flattened-globose, with parenchymatous wall, not radiate, up to 160 μ diam., verrucose; surface cells conoid to mammillate, projecting up to 15 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—44×15—19×14—15 μ.

On *Acalypha* sp., Philippines, Baker 483, type; Rehm, Ascomyc. 2103; Stevens 1211 (type of *I. acalyphae*).

(448) *Asteridiella malloti* (Hansf. & Thirum.) Hansf., Sydowia **10**: 49. 1957.

(3101.5330)

= *Irenina malloti* Hansf. & Thirum., Farlowia **3**: 289. 1948.

Cols. hypophyllous, hidden amonst the dense tomentum of the leaf, to 4 mm. diam., thin, sometimes confluent. Hyphae crooked, cells 20—35×6—7 μ, branching irregular, loosely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 14—29 μ long; cylindric, 5—10 μ long; hc. clavate or irregularly rounded-angulose, sometimes sublobate, 10—20×11—16 μ. Mh. scattered, alternate or unilateral, conoid to ampulliform, 17—22×7—10 μ. P. closely scattered, to 230 μ diam., surface cells mammillate, or with bent conoid processes up to 35 μ high. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 49—57×19—24 μ, the central cell often slightly the largest.

On *Mallotus alba*, India, Thirumalachar s. n., type; — On *M. paniculatus*, Java, BO 12884; — On *Baloghia lucida*, New South Wales, Fraser 148, 219; — ? on *Neotrewia cumingii*, Philippines, Stevens 803, only mycelium found.

(449) *Asteridiella alchorneae-incurvae* Hansf., Sydowia **10**: 46. 1957.

= *Irene alchorneae-incurvae* Hansf., Sydowia **9**: 32. 1955.

Cols. epiphyllous, scattered, thin, to 3 mm. diam. Hyphae undulate to flexuous, cells mostly 30—40×7—9 μ, branching opposite or irregular, often rectangular, loosely reticulate. Ch. alternate or more scattered, usually bent, spreading or subantrorse, 30—40 μ long; stc. cylindric, 10—14 μ long; hc. from subglobose to oblong, entire or slightly angulose, very rarely sublobate, rounded to truncate at apex, 18—29×13—17 μ. Mh. mixed with ch., alternate, ampulliform, 23—30×8—11 μ, neck elongate. P. scattered, each on a radiate subiculum of exhyphopodiate hyphae to 200 μ long; verrucose, to 180 μ diam., surface cells obtusely conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 53—59×20—25×18—21 μ.

On *Alchornea incurva*, Brazil, Ule, Herb. brasil. 916, type (S, F).

(450) *Asteridiella verrucosa* (Pat.) Hansf., Sydowia **10**: 51. 1957.
= *Meliola verrucosa* Pat., Journ. de Bot., Paris, 11: 347. 1897.
= *Irenina verrucosa* (Pat.) Stev., Ann. Mycol. **25**: 457. 1927.

Cols. epiphyllous, to 1 mm. diam., dense, smooth, numerous and subconfluent. Hyphae crooked, branching opposite or irregular, acute to wide, closely interwoven-reticulate, cells mostly 15—25×6—9 μ. Ch. alternate, spreading, antrorse or retrorse, usually irregularly bent, 20—36 μ long; stc. cuneate to cylindric, 3—15 μ long; hc. subglobose, ovate, oblong, or irregularly angulose, versiform, often bent, 13—20× 9—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—21×7—8 μ. P. scattered, verrucose, to 170 μ diam., surface cells obtusely conoid, to 18 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—45×16—19×13—15 μ.

On ? *Hancea* sp., Tonkin, Bon 5840, 5851 in Herb. Patouillard (F).

(451) *Asteridiella entebbeensis* (Hansf. & Stev.) Hansf., Sydowia **10**: 48. 1957.
= *Irenina entebbeensis* Hansf. & Stev., Journ. Linn. Soc. London **51**: 268. 1937.

Cols. epiphyllous, dense, to 4 mm. diam. Hyphae substraight, cells 17—25×7—9 μ, branching opposite or alternate, closely radiating-reticulate. Ch. alternate, subantrorse, straight or slightly bent, 20—20 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. piriform to angulose or sublobate, 13—22×10—16 μ. Mh. mixed with ch., or in some specimens mostly alternate on separate hyphae, ampulliform, 16—21×7—8 μ. P. scattered or in loose central group, verrucose, to 220 diam., surface cells obtusely conoid, to 35 μ high. Sp. cylindric to ellipsoid, 4-septate, obtuse, constricted, 42—49×17—22 μ.

On *Alchornea cordifolia*, Uganda, Hansford 1369 (type), 3118, 3617; Congo, Vanderyst 32500, 32508, 40060; — On *Macaranga schweinfurthii*, Uganda, Hansford 1439, 1782, 2006, 3638; — On *Sapium ellipticum*, Uganda, Hansford 1784, 1343, 2365, 3197, 3361, 3258; Congo Belge, Vanderyst 2739, 15438, 39087, 39092, 39093, 43583, 44053 (BRUX); — On *Phyllanthus discoideus*, Sierra Leone, Deighton 1800, 2159- — On *Manihot utilissima*, Gold Coast, Deighton CB 755, Hughes in IMI 39476; — On *M. glaziovii*, Gold Coast, Hughes in IMI 39531; — On *Chaetocarpus africana*, Congo Belge, Vanderyst 42500, 42539 (BRUX); — On *Discoglypremna caloneura*, Gold Coast, IMI 44151; — On *Sauropus androgynus*, Malaya, Johnston 726; — On *Euphorbiaceae* indet., (? *Sapium* sp.), Congo Belge, Vanderyst 21031 (BRUX).

(452) *Asteridiella entebbeensis* (Hansf. & Stev.) Hansf., var. *codiaei* Hansf., Sydowia **11**: 47. 1958.

Cols. amphigenous, to 2 mm. diam., dense, smooth, much larger and thinner when parasitised. Hyphae substraight to slightly undulate,

branching opposite or irregular at wide angles, becoming closely reticulate, cells about 20×8—9 μ. Ch. alternate, antrorse or spreading, straight or bent, 23—32 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. straight or bent, versiform, irregularly and deeply lobate, 18—26× 14—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. P. loosely aggregate, in centre, globose, rough, to 200 μ diam., surface cells obtusely conoid, to 25 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—48×18—22 μ.

On *Codiaeum variegatum* sp., New Britain, Shaw 1204, type (WARI 7770). Shaw 1205 (WARI 7771).

Though many varieties of the host are cultivated throughout the tropics as hedge plants, this is the first Melioline recorded upon it.

(453) *Asteridiella subapoda* (Syd.) Hansf., Sydowia **10**: 50. 1957.
= *Meliola subapoda* Syd., Ann. Mycol. 12: 547. 1914.
= *Irenina subapoda* (Syd.) Stev., l. c. **25**: 466. 1927.

Cols. hypophyllous, thin, to 10 mm. diam. Hyphae superficial over the dense leaf tomentum, and then with few hyphopodia, or penetrating this and then with more frequent hypopodia, substraight to tortuous, cells 20—40×5—7 μ, branching iirregular, loosely and irregularly interwoven-reticulate. Ch. alternate or more scattered, 17—60 μ long, straight or irregularly bent; stc. cylindric, straight or tortuous, 5—45 μ long; hc. piriform to ovate, entire, straight or slightly bent, 10—15×8—10 μ. Mh. mixed with ch., alternate, rarely opposite, ampulliform, 15—20×6—8 μ. P. scattered, verrucose, to 190 μ diam., surface cells obtusely mammillate to conoid, to 20 μ high. Sp. ellipsoid to subfusoid, ends attenuate-rounded, 36—44×14—18× 11—13 μ, 4-septate, slightly constricted; some spores only 3-septate, but are considered as abnormal.

On *Mallotus philippinensis*, Philippines, PBS 21824, type, Stevens 1678, PBS 2338; Formosa, Yamamoto.

(454) *Asteridiella malloticola* (Yamam.) Hansf., Sydowia **10**: 49. 1957.
= *Irenina malloticola* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **30**: 415. 1940.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., thin. Hyphae strongly undulate to sinuous, cells 18—30×6—8 μ, branching opposite or alternate, at varied angles, loosely reticulate. Ch. alternate, sometimes remote, often bent, 21—45 μ long; stc. cylindric, 7—21 μ long; hc. ovate, ellipsoid, or sometimes angulose, 14—23× 9—16 μ. Mh. few, mixed with ch., opposite or alternate, 14—25× 6—8 μ. P. in central group, or scattered, verrucose, to 210 μ diam., surface cells obtusely conoid, to 24 μ high. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 38—48×16—19×14—15 μ.

On *Mallotus jyponicus*, Formosa, Yamamoto; — On *M. paniculatus*, Formosa, Yamamoto; — On *M. ricinoides*, Philippines,

PBS 24049, 28881; — On *M. philippinensis*, Philippines, PBS 095-a, 905; — On *M.* sp. indet., Philippines, PBS 24650; — On *M. floribundus*, Philippines, PBS 36369 (USDA), det. doubtful, as specimen is heavily parasitised.

(455) *Asteridiella cleistanthi* Hansf., Sydowia **11**: 47. 1958.
= *Irenina cleistanthi* Stev. in herb.

Cols. amphigenous, mostly hypophyllous, to 8 mm. diam. or confluent, smooth, thin. Hyphae substraight to undulate or crooked, branching opposite or irregular, acute to wide, loosely reticulate, cells mostly 20—30×7—9 μ. Ch alternate, usually bent, spreading or antrorse, 24—33 μ long; stc. cylindric, 5—10 μ long; hc. oblong to slightly angulose, usually bent, 18—25×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 25—32×8—9 μ. P. scattered, verrucose, to 180 μ diam., surface cells obtusely conoid, to 17 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—46× 17—20 μ.

On *Cleistanthus* sp., Philippines, PBS 36385, type (FLS).

(456) *Asteridiella antidesmatis* Hansf., Sydowia **10**: 46. 1957.
= *Irenina antidesmae* Hansf., Proc. Linn. Soc. London **156**: 104. 1944.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., thin. Hyphae substraight to sinuous, cells mostly 20—30×7—9 μ, branching alternate or irregular, not opposite, acute, loosely radiating-reticulate. Ch. regularly alternate, antrorse, straight or slightly bent, 25—33 μ long; stc. cuneate, 8—13 μ long; hc. mostly irregularly clavate-cuneate, 3—5-lobate, sometimes bent, versiform, 14—23× 15—23 μ. Mh. numerous, opposite or alternate, ampulliform, mixed with ch., or often separate, 20—28×7—9 μ, neck elongate. P. scattered, verrucose, to 180 μ diam., surface cells conoid, obtuse, to 15 μ high. Sp. oblong, obtuse, 4-septate, constricted, 40—47×16—18 μ.

On *Antidesma venosum*, Uganda, Hansford 2407, 2287, 3180, 3012, 3384, 3471, 3538, 3611.

(457) *Asteridiella drypeticola* Hansf., Sydowia **10**: 59. 1957.

Cols. amphigenous, dense, to 1 mm. diam., smooth. Hyphae substraight, but finely sinuous, cells 20—25×7—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 18—30 μ long; stc. cylindric to cuneate, straight or bent, 6—13 μ long; hc. sinuous-cylindric to more irregularly angled and bent, often sublobate, 14—20×10—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—20× 7—8 μ. P. scattered, each arising from a solid radiate disc, globose, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 35—42×15—17 μ.

On *Drypetes* sp., Porto Rico, Stevens 7885, type (FLS).

(458) **Asteridiella sapii** Hansf., comb. nov.

= *Irene sapii* Hansf., Sydowia **9**: 35. 1955.

Cols. epiphyllous, very thin, to 1 mm. diam., numerous and widely confluent. Hyphae substraight, cells 20—30×7—8 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, antrorse or spreading, usually straight, 18—27 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. globose to piriform, entire, 13—18×12—15 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. P. in loose central group, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 38—44×17—19 μ.

On *Sapium* sp., Brazil, Baker, Plants of Amazon 194, type (K): — On *Maprounea guianensis*, Trinidad, Baker in IMI 23474, with slightly smaller hc., and sp. 35—41×16—18 μ.

(459) *Asteridiella verrucosa* (Pat.) Hansf. var. **pedilanthi** (Cif.) Hansf., comb. nov.

= *Meliola (renina) verrucosa* var. *pedilanthi* Cif., Mycopathologia **7**: 200. 1954.

Cols. epiphyllous, adherent, to 6 mm. diam., thin. Hyphae substraight to undulate, branching opposite or irregular, loosely reticulate, cells mostly 21—34×7—8 μ. Ch. alternate, spreading or subantrorse, straight or bent, 21—32 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. ovate, oblong or truncate, entire or slightly angulose, 18—25×12—17 μ. Mz. mixed with ch., opposite or alternate, conoid to ampulliform, to 21×7—8μ. P. 60—80 μ diam. (obviously immature!) surface cells conoid, projecting. Sp. 40—42×16—18 μ, obtuse, 4-septate, constricted.

On *Pedilanthus latifolius*, San Domingo, Ekman 4177, type (Not seen by present author).

(460) *Asteridiella phyllanthi* (Deight.) Hansf., Sydowia 10: 49. 1957.

= *Irenina phyllanthi* Deight., Sydowia **5**: 1. 1951.

Cols. epiphyllous, thin, arachnoid, to 2 mm. diam. or confluent. Hyphae substraight, cells 17—40×5—7 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate or very rarely opposite, spreading or slightly antrorse, 11—16 μ long; stc. cylindric, 4—5 μ long; hc. subglobose, oblong or short clavate, straight or sometimes slightly bent, entire, 7—11×9—12 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 18—20×6—8 μ. P. scattered, to 150 μ diam., surface cells conoid, to 8 μ high. Sp. oblong, obtuse, 4-septate, constricted, 34—39×14—16 μ.

On *Phyllanthus wildemannii*, Sierra Leone, Deighton 3349, 2158.

(461) *Asteridiella erythrococcae* Hansf., Sydowia **10**: 48. 1957.

= *Irenina erythrococcae* Hansf., Proc. Linn. Soc. London **157**: 173. 1945.

Cols. epiphyllous, less commonly hypophyllous, to 1 mm. diam. or numerous and subconfluent. Hyphae undulate to flexuous, cells mostly 20—30×5—6 μ, brynching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent 12—20 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. from rounded and entire to irregularly 2—3-rounded-angulose or sublobate, 9—13×7—12 μ. Mh. mixed with ch., opposite or mostly alternate, vonoid to short ampulliform, 12—15×7—8 μ. P. scattered, arising from a solid disc, later surrounded by loosely radiating hyphae, globose, to 140 μ diam., surface cells projecting to about 10 μ bluntly conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—38× 12—15 μ.

On *Erythrococca rigidifolium*, Uganda, Hansford 3411, 2328.

(462) *Asteridiella hansfordii* (Stev.) Hansf., Sydowia **10**: 48. 1957.
= *Irenina hansfordii* Stev., Journ. Linn. Soc. London **51**: 269. 1937.

Cols. epiphyllous, thin, to 2 mm. diam., each with central group of perithecia. Hyphae flexuous to undulate or rarely substraight, cells 18—27×6—8 μ, branching opposite at varying angles, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 17—25 μ long; stc. cuneate, 3—8 μ long; hc. rarely subglobose and almost entire, usually 3-angulose to sublobate, 13—17×12—17 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 16—20×7—9 μ. P. in loose central group, verrucose, to 140 μ diam., surface cells obtuse conoid, 10—15 μ high. Sp. oblong to subellipsoid, 4-septate, obtuse, 35—40×14—17×12—14 μ.

On *Acalypha bipartita*, Uganda, Hansford 1197, 1401, 1791, 2152, 2337, 2358, 2611, 2654, 3433, 3567; — On *Mallotus oppositifolius*, Gold Coast, Deighton CB 842, Hughes in IMI 39518, 39519, 39520, 39521, 39523, 39524; — On *Mallotus* sp., Uganda, Hansford 2341; — On *Dalechampia bidentata*, Java, BO 792.

(463) *Asteridiella hansfordii* (Stev.) Hansf. var. *densa* (Hansf. & Deight.) Hansf., Sydowia **10**: 48. 1957.
= *Irenina hansfordii* Stev. var. densa Hansf. & Deight., Mycol. Paper, IMI **23**: 19. 1948.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae sinuous to flexuous, cells 15—20×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, spreading or antrorsely bent, 17—28 μ long; stc. cylindric, 4—8 μ long; hc. widely clavate to obtusely 2—3-angulose, often bent, 11—19×9—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—24×6—8 μ. P. scattered or in a loose central group, to 170 μ diam., surface cells conoid to mammillate, 15—25 μ high. Sp. oblong to subellipsoid, 4-septate, constricted, 36—40×15—17 μ.

On *Alchornea cordifolia*, Sierra Leone, Deighton 1654, 1371, 1583, 1937, 2359, 2360, 544; Gold Coast, Hughes in IMI 36858, 36756, 36757, 36827; — On *A. hirtella*, Sierra Leone, Deighton 1443, 1774, 1895, 1942.

(464) *Meliola ugandensis* Hansf., Journ. Linn. Soc. London **51**: 283. 1937.

Cols. caulicolous, to 4 mm. diam., dense, velvety. Hyphae straight, cells 15—22×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. closely crowded, alternate or opposite in varying proportions, 16—20 μ long, subantrorse, usually straight; stc. cylindric to cuneate, 4—5 μ long; hc. subglobose to ovate, entire, 12—15 μ diam. Mh. mixed with ch., opposite or alternate, ampuulliform, 16—18×10—12 μ. Ms. very numerous, closely scattered, to 220 μ high by 10—12 μ thick below, apex 2—3-dichotomous, branches widely reflexed-divergent, 15—50 μ long, 2-ry to 30 μ long, 3-ry to 12 μ, acute. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—52×14—18 μ.

On *Euphorbia* sp., Uganda, Hansford 1104, type.

(465) *Meliola chandleri* Hansf., Journ. Linn. Soc. London **51**: 271. 1937.

Cols. epiphyllous, to 3 mm. diam., subvelvety, dense. Hyphae undulate, cells 18—23×7—8 μ, branching usually alternate or irregular, acute, densely radiating-reticulate. Ch. alternate, suabntrorse, usually straight, 20—26 μ long; stc. cylindric to cuneate, 6—10 μ long, often antrorse; hc. irregularly 3—4-rounded-angulose to lobate, 15—19×10—18 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, scattered closely, to 260×7—10 μ. straight below, apex 2—3-dichotomous, branches bent and recexed 1-ry to 30 μ, 2-ry and 3-ry to 25 μ, acute. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×14—15 μ.

On *Acalypha fruticosa*, Uganda, Hansford 1827, 2651, 3006.

(466) *Meliola crotonicola* Stev., Ann. Mycol. **26**: 184. 1928.

Cols. hypophyllous, thin, to 12 mm. diam. Hyphae crooked, branching opposite or alternate, acute, loosely reticulate, cells mostly 30—40×5—6 μ. Ch. alternate, spreading, often bent, 14—17 μ long; stc. cuneate to cylindric, 2—7 μ long; hc. globose to ovate, entire, 9—13×9—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 14—18×6—7 μ. Ms. scattered and grouped around P., to 260×7 μ. apex with 2—4 branches to 20 μ long, these irregularly dentate to 10 μ, P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly, constricted, 43—49×14—16 μ the middle cell slightly the largest.

On *Croton* sp., Costa Rica, Stevens 687, type (FLS).

(467) *Meliola acalyphidis* Toro in Chardon & Toro, Monogr. Univ. Porto Rico, B: 2: 117. 1934.

Cols. epiphyllous, to 4 mm. diam., velvety, subdense. Hyphae undulate to sinuous, cells mostly 20—30×6—8 μ, branching alternate or irregular, not opposite, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. ovate, entire or irregularly angulose to lobate, 13—18×10—14 μ. Mh. separate, opposite or alternate, ampulliform, 20—35×7—9 μ, neck elongate. Ms. numerous, scattered and grouped around P., to 650×8—10 μ, apex variously and irregularly dentate, or bifurcate to 20 μ, with branches dentate. P. scattered, globose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×16—18 μ.

On *Acalypha* sp., Venezuela, Chardon 579, type (CUP).

(468) *Meliola janeirensis* Hansf., Proc. Linn. Soc. London **160**: 121. 1948.

Cols. epiphyllous, rather thin, to 3 mm. diam. or confluent, thinly setose. Hyphae substraight, cells 20—30×6—8 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 40% opposite in some parts of the colonies, antorse or spreading, straight or slightly bent, 12—18 μ long; stc. cylindric, 2—5 μ long; hc. globose, entire, 10—14×9—12 μ. Mh. mixed with ch., numerous, opposite or alternate, ampulliform, 15—20×7—10 μ. Ms. thinly scattered and grouped around P., straight, to 300×8 μ, apex variously dentate to 8 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 39—46×14—17 μ.

On *Croton* sp., Brazil, Ule in Rabh.- Wint.-Pazschke, Fung. europ. 3848, type.

(469) *Meliola micropoda* Hansf., Proc. Linn. Soc. London **157**: 177. 1946.

Cols. epiphyllous, rather thin, scattered or confluent, to 6 mm. diam., velvety. Hyphae straight to undulate, cells mostly 20—35×5—7 μ, branching opposite at wide angles, closely interwoven-reticulate. Ch. opposite or alternate in varying proportions, spreading, straight, 10—15 μ long; stc. cylindric, 2—5 μ long; hc. globose, 8—10 μ diam., entire. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×6—8 μ. Ms. numerous, biform: (a) scattered closely over colony, straight, to 900×7—8 μ, 2—4-dentate to 5 μ; (b) grouped around P., to 220 μ long, apex more divided, to 15 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—38×11—15 μ.

On *Croton macrostachys*, Uganda, Hansford 2945, type; — On *C. collenettei*, Sierra Leone, Deighton 552.

(470) *Meliola brevidentata* Syd., Ann. Mycol. **37**: 329. 1939.
= *M. brachyodonta* Syd., l. c., **38**: 52. 1930 (nec Sydow, 1928).

Cols. epiphyllous, 2—4 mm. diam., thin, or confluent and larger. Hyphae substraight to slightly undulate, cells 25—40×5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, or about 20% opposite, at wide angles, straight or slightly bent, 11—16 μ long; stc. cylindric, 3—8 μ long; hc. globose to ovate, entire, 9—11×6—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—8 μ. Ms. scattered loosely and grouped around P., straight, to 300×7—8 μ, apex 2—3-dentate to 6 μ, or in some collections with some simple, acute. P. scattered, verrucose, to 190 μ diam. sp. oblong, obtuse, 4-septate, slightly constricted, 30—38×12—15 μ.

On *Croton curranii*, Venezuela, Sydow, Fung. exot. exs. 791 and Fung. venez. 134, both parts of type collection; — On *Hamenocardia acida*, Sierra Leone, Deighton 1776; Congo Belge, Vanderyst 13581 (BRUX); — On *H. heudelotti*, Sierra Leone, Deighton 1712, 557, 517, 2030; — On *H. lyrata*, Sierra Leone, Deighton 1439.

(471) *Meliola janeirensis* Hansf. var. *ricinodendri* Hughes, Mycol. Paper, IMI, **48**: 51. 1952.

Cols. amphigenous, mostly epiphyllous, to 6 mm. diam. or confluent, dense. Hyphae undulate to sinuous, cells 19—50×6—8 μ, branching opposite, acute, densely reticulate. Ch. alternate or unilateral, 14—19 μ long, straight, slightly antrorse; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to clavate, entire, 10—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—22×6—8 μ. Ms. scattered, straight, to 230×7—9 μ, apex 2—5-dentate to 15 μ. P. scattered, verrucose, to 170 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate. constricted, 38—43×14—16 μ.

On *Ricinodendron africanum*, Gold. Coast, Hughes in IMI 44305, type.

(472) *Meliola jamaicensis* Hansf., Sydowia **9**: 42. 1955.

Cols. hypophyllous, to 15 mm. diam., thin to dense, velvety. Hyphae substraight to sinuous, cells mostly 20—30×7—8 μ, branching opposite, acute, loosely reticulate. Ch. alternate, spreading, straight or sinuous, 21—28 μ long; stc. cylindric, 5—8 μ long; hc. cylindric to ellipsoid, entire, 15—20×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—28×8—10 μ, neck elongate. Ms. scattered, straight, to 900×9—10 μ, apex simple and subacute, or scabrid to shortly dentate (—6 μ). P. scattered, verrucose, to 220 μ diam. Sp. wide ellipsoid, obtuse, 4-septate, constricted, 49—58×23—27 μ.

On *Croton* sp., Jamaica, Hansford 683, type (K).

(473) *Meliola alchorneae* Stev. & Tehon, Mycologia **18**: 12. 1926.

Cols. epiphyllous, thin, to 3 mm. diam. Hyphae substraight to slightly undulate, branching opposite or irregular, acute to wide,

loosely reticulate-interwoven, cells mostly 30—30×5—6 μ. Ch. alternate, or less than 1% opposite, spreading or antrorse, straight or bent, 15—19 μ long; stc. cylindric, 4—8 μ long; hc. subglobose, entire, 9—13×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×6—7 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, simple and obtuse, or irregularly 2—3-dentate to 15 μ, the apex often slightly torulose; teeth obtuse; u0p to 400× 7—8 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 39—46×11—13×9—10 μ.

On *Alchornea* sp., British Guiana, Stevens 198, type (FLS).

(474) *Meliola brideliae* Stev. & Rold., Philipp. Journ. Sci., **56**: 69. 1935.

Cols. epiphyllous, thin, to 10 mm. diam. Hyphae crooked, cells mostly 30—40×6—7 μ, branching opposite at wide angles, loosely interwoven-reticulate. Ch. alternate, spreading, usually bent, 13—18 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. subglobose to ovate, entire, often bent or even transverse, 10—14×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—9 μ. Ms. few, biform: (a) scattered over colony, simple, obtuse, straight or slightly flexuous, to 800×8—9 μ; (b) grouped around P., straight or slightly bent, to 250×7—8 μ, apex rough or irregularly subdentate to 4 μ. P. scattered, slightly verrucose, to 130 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—35×12—14 μ.

On *Bridelia stipularis*, Philippines, Stevens 1543, type (FLS, CUP).

(475) **Meliola crotonis-macrostachydis** Hansf., sp. n.

Cols. epiphyllous, thin, to 3 mm. diam. or widely confluent. Hyphae substraight to undulate, branching opposite or irregular, loosely reticulate, cells mostly 20—35×5—7 μ. Ch. alternate or about 1% opposite, antrorse or spreading, 11—19 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. subglobose, often slightly bent, entire, 9—12×10—12 μ. Mh. mixed with ch., in centre of colony, opposite, ampulliform, 13—16×7—9 μ. Ms. few, thinly scattered, to 400× 7—9 μ, straight, obtuse to subacute, or 2—4-dentate to 10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×13—15 μ.

On *Croton macrostachys*, Uganda, Hansford 3022, type.

(476) *Meliola cladophaga* Syd., Ann. Mycol. 24: 299. 1926.

Cols. caulicolous, black, velvety, dense, to 5×2 mm. Hyphae substraight, cells about 15×5—6 μ, branching opposite at wide angles, close, very densely reticulate and solid in centre. Ch. opposite, or to 10% alternate even where not crowded, antrorse or spreading, straight, 10—14 μ long; stc. cylindric, 2—5 μ long; hc. globose to piriform, entire, 7—10×6—8 μ. Mh. scattered, few, ampulliform, 12—18× 5—7 μ, opposite or alternate. Ms. numerous, closely scattered, simple,

obtuse to subacute, to 360×9—10 μ, upper half flexuous to broadly arcuate or uncinate. P. in dense central group, verrucose, to 180 μ diam. Sp. cylindric to ellipsoid, ends attenuate-rounded, 4-septate, constricted slightly, 45—54×14—17 μ.

On *Croton gossypifolium*, Costa Rica, Sydow, Fung. exot. exs. 618, type.

(477) *Meliola manihoticola* P. Henn., Hedwigia **43**: 364. 1904.

Cols. epiphyllous, rarely also hypophyllous, to 1 mm. diam., subdense. Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate or to 10% opposite, spreading, straight, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. globose, entire, 10—12 μ diam., sometimes longer than wide. Mh. mixed with ch., opposite or alternate, ampulliform, 15—24×6—9 μ, neck elongate. Ms. mostly grouped around P., thinly scattered over mycelium, flexuous to widely hamate, rarely straight, simple, obtuse, 100—160×9—11 μ, translucent dark brown and thick-walled, much resembling ps. of *Irenopsis* spp. P. scattered, not setose, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 31—37×12—13 μ.

On *Manihot* sp., Ule, Mycoth. brasil. 60 (S); — On *M. utilissima*, Brazil, Ule, Herb. brasil. 2969, (type), Ule 3044, 3128, 3129 (S).

(478) *Meliola cluytiae* Van der Bijl, South. African Journ. Sci., **23**: 283. 1926.

Cols. epiphyllous, rarely amphigenous, to 2 mm. diam., velvety. Hyphae radiating, cells 12—28×10—12 μ, branching opposite. Ch. alternate, 28 μ long; hc. globose, entire, 12×12—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform. Ms. numerous, falcate, obtuse, to 400×9—12 μ. P. globose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—52×12—16 μ.

On *Cluytia pulchella*, South Africa, Van der Bijl 2317, type.

Material of this species has not been available to me for examination.

(479) *Meliola euphorbiae* Stev. & Tehon, Mycologia **18**: 11. 1926.

Cols. hypophyllous, 2—5 mm. diam., dense. Hyphae substraight to undulate or flexuous, branching opposite, acute, closely reticulate, cells 15—25×6—7 μ. Ch. opposite or alternate in varying proportions, spreading or antrorse, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to cylindric, entire, 12—15×7—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. numerous, bent, arcuate or cexuous, simple, obtuse to acute, to 400×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 47—53×18—20 μ, the middle cell often slightly the largest.

On *Euphorbiaceae* indet., British Guiana, Stevens 663, type (FLS, F).

(480) *Meliola macarangicola* Hansf., Proc. Linn. Soc. =ondon **157**: 23. 1945.

Cols. hypophyllous, dense, velvety, to 8 mm. diam. Hyphae sinuous to crooked, often geniculate, cells 25—35×6—9 μ, branching opposite or very irregular, densely interwoven-reticulate and almost solid in centre. Ch. alternate or opposite, very variable in size and shap*b*, usually tortuous-bent, 24—45 μ long; stc. flexuous, cylindric or tortuous-bent, 9—25 μ long; hc. clavate, truncate or often very irregular and angulose to lobate, 14—25×12—19 μ, versiform. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, scattered closely, simple, acute, to 320×7—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. ellipsoid, obtuse, 4-septate, 59—68×19—25 μ, the middle cell distinctly the largest.

On *Macaranga schweinfurthii*, Uganda, Hansford 3217 (type), Dummer 1481.

(481) *Meliola excoecariicola* Hansf., Sydowia Beih. **1**: 108. 1947.

Cols. amphigenous, thin to subdense, to 5 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite, subrectangular, loosely to rather closely reticulate, cells mostly 15—20× 6—8 μ. Ch. alternate or about 10% opposite, subantrorse or spreading, straight or slightly bent, 15—19 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. oblong, entire, 11—15×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—9 μ. Ms. mostly grouped around P., straight, simple, acute, to 540×10 μ. P. scattered, globose, verrucose, immature. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 50—45×22—25 μ.

On *Excoecaria philippinensis*, Philippines, PBS 29809, type (FLS).

(482) *Meliola petalostigmatis* Hansf., Proc. Linn. Soc. N.S.W., **78**: 57. 1953.

Cols. epiphyllous, dense, to 1 mm. diam., velvety. Hyphae substraight, cells 15—20×6—7 μ, branching opposite, acute, densely reticulate and almost solid in centre. Ch. alternate or opposite, antrorse, usually bent, 14—23 μ long; stc. cylindric, 3—7 μ long; hc. ovate, ellipsoid or piriform, entire, straight or slightly bent, 10—16×7—10 μ. Mh. numerous, mixed with ch., alternate or opposite, ampulliform, 15—20×7—8 μ. Ms. mostly grouped around P., straight, simple, obtuse to subacute, to 350×7—8 μ. P. in loose central group, verrucose, to 240 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 36—44×15—17 μ.

On *Petalostigma quadriloculare*, New South Wales, Fraser 229, type; — On *P. glabrescens*, Queensland, Langdon 1779.

(483) *Meliola galeariae* Hansf., Reinwardtia **3**: 84. 1954.

Cols. hypophyllous, to 10 mm. diam. or confluent, subdense, velvety. Hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite at wide angles, becoming densely reticulate. Ch. opposite or

alternate in varying proportions, spreading or antrorse, straight or abruptly bent, sometimes recurved at tip, 12—20 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to oblong or cylindric, entire, straight or bent, 9—14×7—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—25×7—9 μ, neck elongate. Ms. scattered, straight, simple, acute, to 370×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 42—48×16—18×13—15 μ.

On *Galearia filiformis*, Java, BO 802, type.

(484) *Meliola tetrorchidiicola* Hansf., Sydowia **10**: 93. 1957.

Cols. hypophyllous, thin, smooth, to 10 mm. diam. Hyphae straight, cells mostly 25—40×5—7 μ, branching opposite or irregular, loosely reticulate. Ch. alternate or more scattered, or about 2% opposite in some colonies, straight or slightly bent, 17—24 μ long; stc. cylindric, 4—7 μ long; ovate, clavate or cylindric, straight or bent, entire, 12—17×8—10 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 18—25×7—8 μ, neck elongate. Ms. mostly grouped around P., straight, simple, obtuse to subacute, to 490×9—11 μ. P. scattered, each on a radiate subiculum of hyphopodiate hyphae, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, constricted, 38—46×16—17×13—14 μ.

On *Tetrorchidium rubivenium*, Brazil, Ule, Herb. brasil. 1496, type (K).

(485) *Meliola homalanthi* Boedijn, Bull. Jard. Bot. Buitenzorg, **III**: 16: 369. 1940.

Cols. caulicolous, to 5 mm. diam. or confluent, dense, vevlety, crustose. Hyphae substraight, cells 25—40×6—8 μ, shorter in the secondary hyphae, closely and oppositely branched at wide angles, becoming almost solid. Ch. opposite or alternate, more or less antrorse, 12—20 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. globose to oblong, entire, 9—12×7—10 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 20—28×7—9 μ. Ms. scattered, erect, straight, simple, obtuse, to 250×8—9 μ. P. closely scattered, verrucose, to 160 μ diam. Sp. oblong, to subellipsoid, obtuse, 4-septate, slightly constricted, 40—48×17—20×14—16 μ.

On *Homalanthus populneus*, Krakatoa, E. Indies, BO 5601, type.

(486) *Meliola homalanthi* Boedijn var. *oldfieldiae* Deight., Sydowia **M**: 75. 1958.

Cols. mostly hypophyllous, velvety, subdense to dense, to 5 mm. diam. Hyphae straight or slightly undulate, branching opposite at wide angles, closely interwoven-reticulate, cells mostly 14—30×5—10 μ. Ch. opposite or alternate, antrorse or spreading, straight or bent, 12—23 μ long; stc. cylindric, 3—10 μ long; hc. subglobose, oblong, ovate or clavate, straight or bent, entire, 9—14×8—10 μ.

Mh. mixed with ch., opposite or alternate, ampulliform, 16—26× 7—9 μ. Ms. scattered and grouped around P., straight to sinuous, simple, acute, to 370×8—10 μ. P. scattered, globose, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45× 15—17×10—12 μ.

On *Oldfieldia africana*, Sierra Leone, Small 5349, type, (IMI 53141).

(487) *Meliola luzonensis* Syd., Ann. Mycol. **15**: 188. 1917.

Cols. amphigenous, mostly epiphyllous, to 8 mm. diam., often confluent, rather thin and subvelvety. Hyphae substraight, cells 20—28×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite or alternate, spreading, substraight, 15—22 μ long; stc. cylindric, 3—5 μ long; hc. oblong to narrowly clavate, entire, 10—17×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. fairly numerous, simple, straight, acute, to 900×10—12 μ. P. loosely aggregate, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 32—38×12—17 μ.

On *Antidesma* sp., Philippines, PBS 23976, type (S, F).

(488) *Meliola hymenocardiae* Hansf. & Deight., Mycol. Paper, IMI **32**: 20. 1948.

Cols. amphigenous, dense, somewhat velvety, to 5 mm. diam. Hyphae substraight to slightly undulate, cells 15—20×6—7 μ. branching opposite at wide angles, densely reticulate. Ch. crowded, alternate or opposite, 12—15 μ long, antrorse; stc. cylindric, 2—4 μ long; hc. subglobose to wide ovate, entire, 9—11×8—10 μ. Mh. mixed with ch., opposite, ampulliform, to 25—7×8 μ, neck elongate. Ms. scattered, straight, simple, acute, to 360×7—9 μ. P. scattered, verrucose, to 160 μ diam., surrounded by radiating hyphae bearing hyphopodia. Sp. oblong, obtuse, 4-septate, constricted, 32—37× 13—15 μ.

On *Hymenocardia lyrata*, Sierra Leone, Deighton 1439 (type), 2028.

On *H. heudelotii*, Sierra Leone, Deighton 2030 p. p.

(489) *Meliola brachypoda* Syd., Ann. Mycol. **20**: 67. 1922.

= *Meliola macarangae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 367. 1917 (nec. Sydow).

Cols. epiphyllous, to 5 mm. diam., thin. Hyphae slightly undulate, cells 15—25×6—7 μ, branching opposite, acute, rather closely interwoven-reticulate. Ch. opposite or alternate in varying proportions, spreading or antrorse, straight or slightly bent, 10—13 μ long; stc. cylindric, 3—4 μ long; hc. subglobose, entire, 8—10 μ diam. Mh. mixed with ch., opposite or alternate, 13—17×6—8 μ. Ms. scattered, straight, to 220×7—8 μ, acute, simple. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—36×13—15×10—12 μ.

On *Macaranga tanarius*, Philippines, PBS 25621, type (S).

(490) *Meliola gymnanthicola* Stev. var. *manihot* (Stev. & Tehon) Stev., Ann. Mycol. **26**: 251. 1928.

= *Meliola manihot*, Stev. & Tehon, Mycologia **18**: 11. 1926.

Cols. epiphyllous, minute, thin. Hyphae straight or slightly flexuous, cells mostly 15—25 μ long, branching opposite, acute, loosely interwoven-reticulate. Ch. alternate or to 10% opposite, straight, spreading or antrorse, 12—16 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to wide ovate, entire, 9—13×8—10 μl Mh. mixed with ch., opposite or alternate, ampulliform, 14—17×7—9 μ. Ms. few, thinly scattered, simple, straight, obtuse, to 250×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×13—15 μ.

On *Manihot* sp., British Guiana, Stevens 217, type (FLS, F).

(491) *Meliola phyllanthicola* Hansf. et Deight., Sydowia **10**: 85. 1957.

Cols. epiphyllous, rather dense, to 1 mm. diam., each with central group of perithecia. Hyphae substraight to slightly sinuous, cells mostly 20—25×6—7 μ, branching usually opposite at wide angles, closely reticulate-radiating. Ch. alternate or to 2% opposite, usually straight and subantrorse, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. globose, entire, 8—11×7—11 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 13—16×6—9 μ. Ms. few, grouped around P., straight, simple, obtuse, to 220×7—9 μ. P. in close central group, verrucose, to 160 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 29—34×12—14 μ.

Phyllanthus reticulatus var. *glaber*, Sierra Leone, Deighton 1835, type, 1834, 1784.

(492) *Meliola teke*, Hansf., Proc. Linn. Soc. London **157**: 180. 1945.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., often confluent, dense, velvety. Hyphae sinuous, cells mostly 20—30×8—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 20—28 μ long; stc. cylindric, 5—9 μ long; hc. clavate to piriform, entire, 14—19×11—14 μ. Mh. scattered, few, opposite or alternate, ampulliform, 22—29×8—9 μ, neck elongate. Ms. numerous, scattered, straight, simple, obtuse, to 1100×10—11 μ. P. scattered, verrucose, to 230 μ diam., often on indistinct radiate mycelial disc. Sp. oblong, obtuse, 4-septate, constricted, 47—52×19—22 μ.

On *Euphorbia teke*, Uganda, Hansford 3004, type; — On *E. neriifolia*, Sierra Leone, Deighton 2348, 2304; — On *Elaeophorbia drupifera*, Gold Coast, Deighton CB 777, with hypopodia rather narrower than in the type, and sp. 48—60×19—25 μ; — On *Elaeophorbia* sp., Sierra Leone, Deighton 2288.

(493) *Meliola macarangae* Syd. var. *longiseta* Hansf., Reinwardtia **3**: 84. 1954.

Cols. mostly epiphyllous, subdense, velvety, to 4 mm. diam. Hyphae crooked to sinuous, cells 30—40×8—10 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate-interwoven. Ch. alternate or more scattered, usually irregularly bent, 33—60 μ long; stc. cylindric/to cuneate, straight or bent, 12—30 μ long; hc. subglobose to elongate ovate, often angulose, versiform, 22—40×13—24 μ. Mh. mixed with ch., alternate, ampulliform, 20—35×9—13 μ, neck elongate. Ms. few to numerous, straight or slightly /flexuous, simple, obtuse, to 630×10—12 μ. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, slightly constricted, 48—55×19—22 μ, the cells more uniform in size than in the type.

On *Macaranga triloba*, Java, BO 13371 (type), 12338, 800; — On *M. tanarius*, Java, BO 16348.

(494) *Meliola kansireiensis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 19. 1941.

Cols. epiphyllous, to 3 mm. diam., sometimes confluent, dense. Hyphae straight or slightly undulate, cells 21—32×7—8 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, stc. 5—8 μ long, hc. oblong to ovoid, straight or slightly bent, 14—20×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 21—30×7—9 μ, neck elongate. Ms. mostly grouped around P., simple, straight or slightly bent, obtuse or subacute, to 810×11—14 μ. P. subgregarious, rarely scattered, verrucose, to 225 μ diam., surrounded by a radiate subiculum. Sp. oblong to subellipsoid, obtuse, 4-septate, 44—48×14—21 μ, strongly constricted.

On *Glochidion album*, Formosa, Yamamoto, type (not seen by present author).

(495) *Meliola argomuellerae* Hansf., Proc. Linn. Soc. London **156**: 105. 1944.

Cols. amphigenous, thin, to 5 mm. diam. Hyphae substraight, cells mostly 25—40×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, straight or slightly bent, subantrorse, 15—23 μ long; stc. cylindric, 3—6 μ long; hc. oblong to slightly clavate, entire, 13—18×9—12 μ. Mh. scattered, opposite or unilateral, few, elongate ampulliform, 18—28×7—8 μ. Ms. scattered loosely and grouped around P., straight, simple, obtuse to subacute, to 320×7—8 μ. P. scattered, verrucose, to, 610 μ diam., each on loosely radiate subiculum of exhyphopodiate hyphae. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—47×16—21 μ.

On *Argomuellera macrophylla*, Uganda, Hansford 3275, type.

(496) *Meliola alchorneicola* Hansf., Reinwardtia **3**: 83. 1954.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae straight or

slightly undulate, cells mostly 15—25×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 20—25 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. piriform to subglobose, usually more or less deeply lobate or merely rounded-angulose, 13—18×12—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—9 μ. Ms. scattered, straight, simple, obtuse to acute, to 480×10—12 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 43—49×20—22 μ.

On *Alchornea javanensis*, Java, BO 10991, type.

(497) *Meliola heveae* Vincens, Bull. Soc. Path. Veg. France, 2: 26. 1925.

Cols. thin, to 2 mm. diam. Hyphae slightly undulate, cells 15—20×8 μ, branching alternate or irregular, acute, loosely radiating-reticulate. Ch. alternate, subantrorse, 24—28 μ long; stc. cylindric, 8—10 μ long; hc. straight, ovate, entire, 15—20×8—10 μ. P. in loose central group, globose, to 200 μ diam. Sp. ellipsoid, with small conoid-obtuse end cells, 4-septate, 42—46×15—17×12—14 μ, the middle cell largest.

On *Hevea brasiliensis*, Brazil, Vincens, type.

The present author has been unable to locate authentic material of this species; Herb. Paris contains merely the original Vincens drawing. The setae as drawn by Vincens appear to be perithecial, 55—60 μ long, obtuse to subacute, continuous, straight, somewhat thick-walled, dark brown, about 10 μ wide at the base. It is possible that this may belong to *Irenopsis*.

(498) *Meliola sauropicola* Yates, Philipp. Journ. Sci., C. Botany, 12: 368. 1917.

Cols. amphigenous, to 3 mm. diam., rather dense, velvety. Hyphae substraight or somewhat undulate, cells mostly 30—40×7—9 μ, branching opposite at wide angles, loosely to closely interwoven-reticulate. Ch. alternate, spreading, straight or slightly bent, 18—30 μ long; stc. cylindric to cuneate, 6—13 μ long; hc. subglobose, ovate or widely clavate, entire, 12—20×8—13 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15—22×7—10 μ. Ms. mostly closely grouped around P., straight or slightly flexuous, simple, obtuse, to 800×9—11 μ, attenuate at apex to 4—5 μ wide. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—44×13—15 μ.

On *Sauropus* sp., Philippines, PBS 24705, tye.

(499) *Meliola brideliicola* Hansf., Proc. Linn. Soc. London 157: 175. 1946.

Cols. hypophyllous, dense, velvety, to 8 mm. diam. Hyphae sinuous to crooked, cells mostly 20—40×5—8 μ, branching irregular, densely interwoven-reticulate. Ch. alternate, spreading, 18—35 μ

long, usually irregularly bent; stc. cylindric, 5—20 μ long; often bent and sometimes swollen; hc. cylindric-clavate and entire or somewhat lobate, often bent, 10—20×6—10 μ. The ch. are often scarcely distinguishable from short mycelial branches. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 20—30×7—9 μ, neck elongate. Ms. scattered, numerous, simple, obtuse, to 300×6—7 μ, slightly attenuate towards apex, straight or slightly flexuous. P. scattered, verrucose, to 150 μ diam. Sp. cylindric, ends obtusely rounded or slightly attenuate, 4-septate, constricted, 41—47×12—15 μ.

On *Bridelia micrantha*, Uganda, Hansford 2639 (type), 2800, 3033, 3183, 3599.

(500) *Meliola ramosii* Syd., Ann. Mycol. **12**: 552. 1914.

Cols. epiphyllous, thin, arachnoid, to 3 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 25—35×6—8 μ, branching opposite, acute, loosely reticulate-interwoven. Ch. alternate, antrorse or spreading, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to ovate, entire, 10—15×8—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×7—8 μ. Ms. grouped around P. and thinly scattered over colony, straight, simple, obtuse, to 200×7—8 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, 26—34×12—14 μ.

On *Hormonoia riparia*, Philippines, PBS 246, 20993, 29079, 3141, 38299, Baker 552, Sydow, Fung. exot. exs. 378.

(501) *Meliola maesobotryae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 21. 1948.

Cols. hypophyllous, dense to subcrustose, to 3 mml. diam. Hyphae sinuous to flexuous, cells mostly 20—30×6—8 μ, branching opposite or irregular, acute, densely reticulate and almost solid in centre. Ch. alternate, subantrorse, straight or slightly bent, 14—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate, piriform or angulose to sublobate, 10—17×10—13 μ. Mh. few, mixed with ch., alternate or rarely opposite, conoid to ampulliform, 13—20×6—8 μ. Ms. mostly grouped around P., straight, simple, obtuse, to 200×7—9 μ. P. scattered, vdrrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—38×13—16 μ.

On *Maesobotryae sparsiflora*, Sierra Leone, Deighton 2358; Gold Coast, Deighton CB 994, type.

(502) *Meliola gymnanthicola* Stev., Illinois Biol. Monogr. 2: 49. 1916.

Cols. epiphyllous, to 4 mm. diam., dense. Hyphae substraight, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, spreading or antrorse, often bent, 14—19 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate, piriform or cylindric, entire, 10—14×8—11 μ. Mh.

mixed with ch., alternate or opposite, ampulliform, 16—19×7—8 μ. Ms. scattered, straight or slightly flexuous, to 300×7—8 μ, obtuse. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—42×15—18×11—13 μ.

On *Gymnanthes lucida*, Porto Rico, Stevens 8596, type (FLS).

(503) *Meliola anfracta* Cif., Ann. Mycol. Berlin **36**: 204. 1938.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent. Hyphae more or less undulate, cells mostly 25—30×5—8 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, antrorse or spreading, usually straight, 19—23 μ long; stc. short cylindric, 2—5 μ long; hc. deeply lobate, irregularly stellate, 14—19×11—19 μ. Mh. on few hyphae, mixed with ch., mostly opposite, conoid to ampulliform, 17—24×5—8 μm neck elongate. Ms. grouped around P., straight or slightly bent, to 280×6—8 μ, simple, obtuse. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 33—39× 17—20 μ.

On *Croton angustatis*, San Domingo, Ciferri, Mycofl. doming. exs. 243, type.

On *C.* sp., San Domingo, Ciferri 243-bis.

(504) *Meliola mauritiana* Hansf., Sydowia **9**: 20. 1955.

Cols. hypophyllous, dense, velvety, to 6 mm. diam., or widely confluent. Hyphae substraight, cells mostly 15—25×9—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, or less than 1% opposite, straight or bent, antrorse or spreading, 25—35 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. ovate to widely piriform, entire or slightly rounded-angulose, sometimes bent, 19—24× 11—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 19—26×9—11 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 1100×13—15 μ, rigid. P. scattered, globose, verrucose, to 230 μ diam. Sp. cylindric to subellipsoid, 4-septate, obtuse, constricted, 52—59×22—25 μ.

On *Antidesma rotundifolia*, Mauritius, type in Herb. Kew.

(505) *Meliola macarangae* Syd.. Ann. Mycol. **15**: 188. 1917.

Cols. hypophyllous or caulicolous, rarely epiphyllous, to 10 mm. diam., velvety, rather dense. Hyphae flexuous to crooked, cells mostly 15—40 μ long, 5—7 μ thick, branching opposite or irregular at varied angles, densely reticulate-interwoven. Ch. alternate, spreading or antrorse or usually variously bent, 20—30 μ long; stc. cylindric to cuneate, 4—15 μ long; hc. subglobose, ovate, clavate or rounded-angulose, sometimes sublobate, versiform, straight or bent, 14—22× 9—20 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform. numerous, scattered, straight or slightly flexuous, simple, acute, to 330×9—12 μ. P. subaggregate in centre of colony, verrucose, to 200 μ diam. Sp. oblong to ellipsoid with attenuate-rounded ends, 4-septate,

constricted, 40—55×17—23×15—17 μ, the middle cell distinctly the largest.

On *Macaranga tanarius* and *M. bicolor*, Philippines, PBS 24045, 23786 (type), 23235, 36337; — On *M. tanarius*, Java, BO 10396.

(506) *Meliola glochidiicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 19. 1941.

Cols. epiphyllous, to 2.5 mm. diam., subdense. Hyphae undulate, cells mostly 25—35×7—9 μ, branching alternate, rather densely reticulate. Ch. alternate, often bent, 25—33 μ long; stc. cylindric to cuneate, 9—14 μ long; hc. ellipsoid to obovoid, slightly irregular to sublobate, 15—21×14—16 μ. Mh. few, opposite or alternate, ampulliform, 18—30×8—9 μ, mixed with ch., Ms. mostly grouped around P., straight or slightly flexuous, simple, obtuse, to 435×9—10 μ. P. in central group, verrucose, to 280 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 46—52×14—19 μ.

On *Glochidion hypoleucon*, Formosa, Yamamoto, type (not seen by present author).

(507) *Meliola macarangae* Syd. var. **apayaoensis** (Yates) Hansf., comb. n.

(3111.5221)

= *Meliola apayaoensis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 364. 1918.

Cols. amphigenous, mostly epiphyllous, velvety, dense. Hyphae substraight to crooked, cells mostly 25—30×6—7 μ, branching opposite or irregular, acute, closely interwoven-reticulate and often nearly solid. Ch. alternate, straight or irregularly bent, 20—30 μ long; stc. cuneate to cylindric, 6—15 μ long, often bent; hc. ovate, or usually irregular and angulose to sublobate, 12—22×10—19. Mh. few, mixed with ch., alternate or opposite, 18—23×7—8 μ. Ms. numerous, scattered, straight or flexuous, simple, acute, to 280×10—12 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to narrowly ellipsoid, obtuse, 4-septate, constricted, 48—58×13—16 μ.

On *Macaranga tanarius*, Philippines, PBS 28331, type.

Stevens (1928) considered this as identical with *M. macarangae*, but the spores are much narrower, and so far the present author has failed to find intermediates in this character.

(508) *Meliola colliguajae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: no. 1357. 1912.

Cols. epiphyllous, thin to arachnoid, to 8 mm. diam. Hyphae undulate to sinuous, cells mostly 20—30×5—7 μ, branching alternat or irregular, not opposite, acute, loosely interwoven-reticulate. Ch. alternate, antrorse, often bent, 16—28 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. piriform to rounded-angulose, 11—17×9—14 μ. Mh. separate, opposite or alternate, ampulliform, 18—24×7—8 μ. Ms. mostly around P., thinly scattered on mycelium, straight or

slightly flexuous, simple, acute, to 400×8—10 μ. P. scattered, slightly verrucose, to 230 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 33—41×14—15 μ.

On *Colliguaja brasiliensis*, Argentina, Spegazzini, type.

(509) *Meliola perae* Hansf., Sydowia 9: 21. 1955.

Cols. amphigenous, mostly hypophyllous, thin, to 2 mm. diam or. confluent, with central loose group of perithecia. Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite, acute, loosely reticulate-radiating. Ch. alternate or less than 1% opposite, subantrorse, usually straight, 15—22 μ long; stc. cylindric, 3—10 μ long; hc. oblong, entire, 11—15×8—10 μ. Mh. mixed with ch., opposite or mostly alternate, ampulliform, 12—19×7—9 μ. Ms. grouped around P., straight, simple, obtuse to acute, to 280×8—9 μ. P. in central loose group, verrucose, to 220 μ diam., arising from a solid, radiate, mycelial disc. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—46×15—16 μ.

On *Pera leandri*, Brazil. Ule, Herb. brasil. 2541, type (K).

(510) *Meliola excoecariae* Doidge, Trans. Roy. Soc. South Africa 8: 139. 1920.

Cols. amphigenous, subdense, to 10 mm. diam. Hyphae substraight to undulate, cells mostly 15—40×6—8 μ, branching alternate or irregular, acute, closely reticulate. Ch. alternate, subantrorse, straight or bent, 25—35 μ long; stc. cuneate, 7—10 μ long; hc. versiform, rarely nearly entire, mostly rounded-angulose to lobate, 14—22× 11—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. scattered, simple, straight, acute, to 500×6—7 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×13—17 μ.

On *Excoecaria caffra* (= *Sapium smithii*), South Africa, PRET 11566, type.

(511) *Meliola longispora* (Gaill.) Stev., Ann. Mycol. 26: 244. 1928.
= *Meliola malacotricha* Speg. var. *longispora* Gaill., Le Genre *Meliola*, 1892, p. 82.

Cols. amphigenous, mostly epiphyllous, thin, slightly velvety, to 3 mm. diam. Hyphae substraight to slightly undulate, cells mostly 25—35×6—7 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, subantrorse, straight or bent, 12—15 μ long; stc. cuneate or cylindric, 2—5 μ long; hc. subglobose to wide clavate, entire, 9—12 μ diam. Mh. mixed with ch., opposite or alternate, ampuliform, 20—28×6—8 μ, neck elongate. Ms. mostly grouped around P., straight, simple, acute, to 320×7—8 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—43× 15—17 μ.

On *Croton* sp., Brazil, Ule, Herb. brasil. 1006, type; Ule in Rabh.-Wint., Fung. europ. 3851; Venezuela, Muller 2361 (CUP).

(512) *Meliola hippomaneae* Stev., Ann. Mycol. 26: 284. 1928.

Cols. epiphyllous, dense, crustose. Hyphae undulate to sinuous, branching alternate or irregular, rarely opposite ,acute, becoming densely reticulate and nearly solid, cells mostly 15—25×7—8 μ. Ch. alternate, subantrorse, straight or bent, 18—30 μ long; stc. cuneate, 5—10 μ long; hc. versiform, irregularly and deeply lobate, straight or bent, 13—21×12—20 μ. Mh. separate, alternate, ampulliform, 18—23×7—9 μ. Ms. few, scattered, straight, simple, acute, to 400.×10—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—50×18—20 μ.

On *Hippomane mancinella*, Panama, Stevens 375, type (FLS, F).

(513) *Meliola bougheyana* Hughes, Mycol. Paper, IMI 48: 46. 1952.

Cols. caulicolous, dense, to 7 mm. diam. Hyphae sinuous, cells mostly 22—40×7—10 μ, sometimes torulose, branching opposite or irregular, loosely reticulate. Ch. alternate, straight or slightly bent, 18—24 μ long; stc. cylindric to cuneate, 4—13 μ long; hc. mostly sublobate, sometimes subclavate or lobate, 13—17×12—18 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform with long neck. Ms. few to numerous, simple, acute, to 300×8—10 μ, straight. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—45×15—17 μ.

On *Macaranga huraefolia*, Gold Coast, Hughes in IMI 39517, type; — On *M.* sp., Philippines, PBS 24045; — On *M.* togoensis, Ivory Coast, Chevalier 164101 (P).

(514) *Meliola glochidii* Stev. & Rold., Philipp. Journ. Sci. 56: 73. 1935.

= *Irenina sinuosa* Stev. & Rold., l. c., 56: 54. 1935.

Cols. hypophyllous, to 10 mm. diam., velvety, dense. Hyphae substraight, cells mostly 15—22×6—7 μ, branching opposite, wide, closely reticulate. Ch. alternate, antrorse or spreading, usually straight, 16—21 μ long; stc. cylindric, 3—5 μ long; hc. ovoid to cylindric-clavate, entire, 13—17×8—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 17—22×6—7 μ. Ms. grouped around P., straight, simple, acute, to 250×8—10 μ. P. scattered, slightly verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 44—50×15—17 μ.

On *Glochidion* sp., Philippines, Stevens 1561, type (FLS, CUP); Stevens 1744 (type of *I. sinuosa*).

Examination of the type of *Irenina sinuosa* has shown that it has mycelial setae, though very few, scattered and grouped around P., to 320×9 μ, simple, straight, acute. The main difference from the type of *M. glochidii* is in the very crooked mycelium, which the present author considers to be due to the effect of the different host species.

(515) *Meliola serdangensis* Hansf., Sydowia Beih. **1**: 116. 1957.

Cols. epiphyllous, to 4 mm. diam., dense, subvelvety. Hyphae undulate to sinuous, branching alternate or irregular, acute or wide, becoming densely reticulate-interwoven, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 17—23 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. ovate to subglobose with margin undulate, crenulate or sometimes sublobate, straight or bent, 11—18×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—20×7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute or subacute, to 190×7—8 μ. *M* scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 36—42×15—17 μ.

On *Mallotus paniculatus*, Malaya, Johnston in IMI 61991-a, type.

(516) Meliola crotonis-nigritani Deight., Sydowia **11**: 102. 1958.

Cols. amphigenous, thin, thinly velvety, to 3 mm. diam. Hyphae substraight to undulate or crooked, cells mostly 15—30×5—6 μ, branching opposite or irregular at wide angles, loosely interwoven-reticulate. Ch. alternate (less than 1% opposite), straight or slightly bent, 12—15 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, entire, 9—12×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—27×7 μ, neck elongate. Ms. scattered and grouped around P., straight, simple, acute, to 1000×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—37×14 μ.

On *Croton nigritanum*, Sierra Leone, Deighton 3820, 5124.

(517) *Meliola jatrophae* Stev., Illinois Biol. Monogr. **2**: 48. 1916.

Cols. epiphyllous, to 4 mm. diam., thin. Hyphae substraight to undulate, branching acute, opposite or irregular, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 16—20 μ long; stc. cuneate, 4—6 μ long; hc. ovoid, entire, 12—16×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—17×6—8 μ. Ms. few, thinly scattered and grouped around P., straight, simple, acute, to 350×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 30—34×16—18 μ.

On *Jatropha hernandifolia*, Porto Rico, Stevens 7873 (type), 7930.

(518) *Meliola jatrophae* Stev. var. *adeliae* Cif., Mycopathologia **7**: 143. 1954.

Cols. thin, to 1 mm. diam., or numerous and confluent over the leaf. Hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight, 16—22 μ long; stc. cuneate to cylindric, 3—8 μ long; hc. ovate, entire, 11—15×8—10 μ. Mh. fairly numerous, separate, opposite or alternate, ampulliform, 15—22×6—

8 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, acute, to 490×7—8 μ. P. loosely scattered, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 28—33× 13—16×11—13 μ.

On *Adelia ricinella*, San Domingo, Ciferri 2775, type (S).

(519) *Meliola morbosa* Stev., Bull. Bishop Mus. **19**: 38. 1925.

Cols. amphigenous, to 3 mm. diam., dense. Hyphae substraight to slightly undulate, branching opposite, acute, closely reticulate, cells mostly 12—20×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 19—30 μ long; stc. cuneate to cylindric, often bent, 4—15 μ long; hc. oblong-ovoid, entire, 12—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—8 μ. Ms. few, scattered, straight or slightly bent, simple, acute, to 250×9—11 μ. P. scattered, slightly verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—38×14—15 μ.

On *Claoxylon sandwicensis*, Hawaii, Stevens 452, type (FLS, F).

Host Family 137. Cunoniaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.5230 Cols. thin; hyphae undulate; hc. lobate; app. to 75 × 15 μ ..... *megalongensis* (520)

Meliola

3111.5221 Cols. thin; hyphae straight; hc. cylindric, entire; ms. obtuse ..... *ceratopetali* (521)

3111.4223 Cols. dense, subvelvety; hyphae crooked; hc. sinous-lobate; ms. acute ..... *cunoniae* (522)

(520) **Appendiculella megalongensis** Hansf., comb. n.
= *Irene megalongensis* Hansf., Proc. Linn. Soc. N.S.W., **78**: 52. 1953.

Cols. amphigenous, to 5 mm. diam., rather thin. Hyphae undulate to crooked, cells mostly 25—35×6—8 μ, branching alternate or irregular, loosely reticulate. Ch. alternate, often bent, 25—35 μ long; stc. cuneate to cylindric, 6—14 μ long; hc. irregularly lobate, often bent, 15—22×10—17 μ, versiform. Mh. few, mixed with ch., alternate, ampulliform, 20—25×7—9 μ. P. scattered, rough, to 250 μ diam.; app. translucent pale brown, curved, obtuse, transversely striate, smooth, thin-walled, to 75×15 μ, numerous, continuous. Sp. oblong to subellipsoid, obtuse, 3-septate, 44—51×16—19 μ.

On *Ceratopetalum* apetalum, New South Wales, Fraser 209, 179, 166 p. p.; — On *Ackama paniculata*, New South Wales, Fraser 214, 157, 130.

(521) *Meliola ceratopetali* Hansf., Proc. Linn. Soc. N.S.W. **78**: 53. 1953.

Cols. amphigenous, thin, to 5 mm. diam. Hyphae substraight,

cells 30—40×6—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate, straight or bent, 17—25 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with rounded apex, entire, straight or bent, 13—20×7—10 μ. Mh. mixed with ch., alternate, rarely opposite, ampulliform, 15—25×6—8 μ. Ms. few, only grouped around P., straight, simple, obtuse, to 150×7—8 μ. P. scattered, verrucose, to 160 μ diam., surface cells bluntly conoid. Sp. oblong, obtuse, 4-septate, constricted, 43—51×17—18×14—16 μ.

On *Ceratopetalum apetalum*, New South Wales, Fraser 151, 99, 166 p. p.

(522) *Meliola cunoniae* Hansf., Sydowia **9**: 13. 1955.

Cols. amphigenous, to 1.5 mm. diam., dense, somewhat velvety. Hyphae crooked, cells mostly 15—25×7—8 μ, branching alternate or irregular, rarely opposite, acute, densely reticulate. Ch. alternate, spreading, straight or bent, 21—32 μ long; stc. cylindric, 5—12 μ long; hc. cylindric to clavate, usually irregularly rounded-angulose to shallowly lobate, 12—22×8—16 μ. Mh. mixed with ch., alternate, ampulliform, 15—20×7—10 μ. Ms. closely scattered, straight, simple, acute, to 520×10—12 μ. P. in central group, verrucose, to 280 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 40—48×17—20×14—15 μ.

On *Cunonia capensis*, South Africa, MacOwan 1262, type (K, sub *M. polytricha*); Roum., Fung. sel. exs. 5943.

Host Family 139. Escalloniaceae.

Synopsis of accepted species of *Meliolineae:*
Meliola

3143.4221	Cols. thin; hyphae substraight; hc. oblong to subclavate, entire; ms. 1-4-dichotomous	*choristylidis*	(523)
3112.4222	Cols. thin; hyphae substraight; hc. cylindric-clavate, entire; ms. acute	*cylindrophora*	(524)

(523) *Meliola choristylidis* Doidge, Bothalia **2**: 236. 1927.

Cols. epiphyllous, to 10 mm. diam., thin. Hyphae substraight, cells mostly 15—40 μ long, branching opposite at wide angles, loosely reticulate. Ch. opposite, alternate or unilateral, usually straight, spreading or subantrorse, 14—18 μ long; stc. cylindric, 3—8 μ long; hc. cylindric to subclavate, entire, 10—14×8—10 μ. Mh. mixed with ch., opposite, conoid to ampulliform, 14—17×6—7 μ. Ms. mostly around P., to 250×7—10 μ, 1—4-dichotomous above with widely divergent branches, 1-ry and 2-ry to 50 μ long, the others shorter and the ultimate branches 5—10 μ long, acute. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—43×13—20 μ.

On *Choristylis rhamnoides*, South Africa, PRET 17733, type.

(524) *Meliola cylindrophora* Rehm, Philipp. Journ. Sci, C. Botany 8: 181. 1913.

Cols. epiphyllous, rarely also hypophyllous, to 4 mm. diam., thin. Hyphae substraight, cells mostly 20—25×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite, alternate only where crowded, spreading to subantrorse, usually straight, 11—16 μ long; stc. cylindric, 2—5 μ long; hc. cylindric to clavate, entire, 8—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—8 μ. Ms. few to numerous, scattered, simple, acute, straight, to 350×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, rather strongly constricted, 36—48× 15—19×14—15 μ, the miccle cell often the largest.

On *Itea maesifolia*, Philippines, Baker 394, type, Rehm, Ascomyc. 2076, PBS 8437; — On *I. macrophylla*, Philippines, PBS 38309, 38274, 38204, Stevens 1609; Java, BO 13358, 10973, 13526. — On *I. chinensis* var. *subserrata*, Formosa, Yamamoto (USDA).

Host Family 142. Hydrangeaceae.

(525) *Asteridiella hydrangeae* (Yamam.) Hansf., Sydowia **10**: 48. 1957.

= *Irenina hydrangeae* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 220. 1941.

Cols. mostly epiphyllous, effuse, to 3 mm. diam. or sometimes confluent. Hyphae undulate, cells 13—32×7—10 μ, branching opposite, loosely interwoven-reticulate. Ch. alternate, 19—28 μ long; stc. 6—12 μ long; hc. subglobose to irregular, angulose to sublobate, 16—19×13—19 μ. Mh. not numerous, mixed with ch., opposite or alternate, ampulliform, 16—23×7—9 μ. P. in central group, verrucose, to 225 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—41× 14—19 μ.

On *Hydrangea chinensis*, Formosa, Yamamoto, type (not seen by present writer).

(526) *Meliola pileostegiae* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 228. 1941.

(3113.4233)

Cols. amphigenous, dense, velvety, to 4 mm. diam. Hyphae straight or slightly undulate, branching opposite, acute, densely reticulate and becoming almost solid, cells mostly 17—23×7—9 μ. Ch. opposite or alternate, antrorse, straight or bent, 16—22 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. oblong to ellipsoid, entire, often bent, 11—16×9—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—23×7—8 μ. Ms. scattered, straight or slightly bent, simple, acute, to 870×9—11 μ. P. in loose central group, verrucose,

to 225 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—50×16—18×14—16 μ.

On *Pileostegia viburnoides*, Formosa, Yamamoto (co-type in USDA).

Host Family 143. Rosaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.5230	Cols. subcrustose; hyphae undulate; hc. 3-4-lobate; app. 9—16, zo 125 μ long	*stranvaesiicola*	(527)
2201.4230	Cols. thin to subdense; hyphae straight or undulate; hc. 2-5-lobate; app. 6—10, to 110 μ long	*calostroma*	(528)
2201.4230	Cols. subdense; hyphae undulate; hc. sub-lobate; app. numerous, to 70 μ long	*acaenae*	(529)
2201.3230	Cols. thin; hyphae undulate; hc. lobate; app. 2—3, to 60 μ long	*photinicola*	(530)

Asteridiella

2101.5330	Cols. dense; hyphae substraight; hc. 2-4-lobate; P-cells mammillate, to 30 μ high	*rhaphiolepsis*	(531)
2101.5230	Cols. dense; hyphae substraight; hc. angulose to lobate	*pygei*	(532)
2101.3230	Cols. thin to subdense; hc. entire or angulose; P-cells conoid, to 20 μ high	*rosae*	(533)
3101.4230	Cols. dense; hyphae substraight; hc. clavate-cylindric, entire or angulose	*prunicola*	(534)
3101.4220	Cols. dense; hyphae tortuous; hc. ovate or angulose; P-cells to 15 μ high	*duportii*	(534a)
3101.3220	Cols. thin; hyphae substraight; hc. globose, entire; P-cells rounded, to 10 μ high	*rubi*	(535)

Meliola

3112.4211	Cols. thin to subdense; hyphae undulate; hc. ovate-oblong or angulose; ms. acute	*rubi*	(536)
3111.3232	Cols. thin; hyphae straight or undulate; hc. globose, entire; ms. obtuse	*formosensis*	(537)
3111.3223	Cols. very thin; hyphae undulate; hc. sub-globose, entire; ms. acute	*rubiella*	(538)

(527) **Appendiculella stranvaesiicola** (Yamam.) Hansf., comb. n.
= *Irene stranvaesiicola* Yamam., Trans. Nat. Hist. Soc. Formosa **30**: 415. 1940.

Cols. epiphyllous, thinly crustose, to 4 mm. diam. Hyphae straight or slightly undulate, cells 23—46×7—9 μ, branching opposite, alternate or irregular, densely reticulate. Ch. alternate, often bent, 25—40 μ long; stc. 9—18 μ long; hc. irregular, often bent, 3—4-lobate, 16—23×14—21 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—32×8—11 μ. P. in central loose group, verrucose, to 300 μ diam., appendages 9—16, obtuse and bent to incurved at

apex, attenuate upwards, transversely striate, 60—124×19—32 μ wide at base. Sp. ellipsoid, often bent, obtuse, 3-septate, constricted, 44—58×15—20 μ.

On *Stranvaesia niitakayamensis*, Formosa, Yamamoto, type (not seen by present author).

(528) *Appendiculella calostroma* (Desm.) Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math. naturw. Kl. **138**: 556. 1919.
= *Sphaeria calostroma* Desm., Bull. Soc. Bot. France **4**: 1011. 1857.
= *Chaetosphaeria calostroma* (Desm.) Sacc., Syll. Fung. **2**: 95. 1883.
= *Meliola calostroma* (Desm.) Hoehnel, Ann. Mycol. **15**: 363. 1917.
= *Irene calostroma* (Desm.) Hoehnel, l. c., **16**: 213. 1918.
= *Meliola puiggarii* Speg., Bol. Acad. Nac. Cienc. Cordoba, **11**: no. 228. 1889.
= *Irene puiggarii* (Speg.) Doidge, South African Journ. Nat. Hist. **2**: 39. 1920.
= *Meliola rubicola* P. Henn., Hedwigia **43**: 140. 1904.
= *Meliola autumnalis* Syd., Ann. Mycol. Berlin **2**: 169. 1904.
= *Meliola sanguinea* Ell. & Everh., Journ. Mycol. **2**: 42. 1888.
= *Irenina sanguinea* (E. & E.) Stev., Ann. Mycol. **25**: 448. 1927.
= *Irenina rubi* Stev. & Rold. var. *angulata* Stev. & Rold., Philipp. Journ. Sci. **56**: 52. 1935.

Cols. amphigenous, mostly epiphyllous, thin to subdense, to 5 mm. diam. Hyphae straight to undulate, cells mostly 25—40×6—8 μ, branching opposite or alternate, loosely to rather closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—40 μ long; stc. cuneate to cylindric, 10—18 μ long; hc. rarely subglobose and almost entire, usually rounded-angulose to irregularly 3—6-lobate, 12—20×12—20 μ. Mh. mixed with ch., mostly alternate, ampulliform 14—24×6—8 μ. P. in central group or sometimes scattered, verrucose, to 250 μ diam., surface cells conoid to mammillate, with some produced into appendages; app. 6—10, brown, subcylindric, more or less curved and attenuate above to obtuse apex, transversely striate, smooth, continuous, to 110 μ long by 20—26 μ diam. at the base. Sp. bent cylindric, obtuse, 3-septate, slightly constricted, 40—50× 13—15 μ.

On *Rubus trivialis*, U.S.A., Langlois 74, type of *M. sanguinea*, (K); — On *R. brasiliensis*, Brazil, Usteri 74 (S); — On *R. moluccanus*, India, Thirumalachar 861; New South Wales, Fraser 122, 206, 6, 163; Philippines, Stevens 1461 p. p., 1361 p. p.; — On *R. pinnatus* and *R. rigidus*, South Africa, PRET 1771, 2425, 10150, 12278, 17185, 9503, 1574, 17735; — On *R. rosaefolius*, Philippines, Stevens 193 p. p., 1549 p. p. (type of *Irenina rubi* var. *angu-*

lata), 1472 p. p.; — On *R. urticifolius*, Brazil, Usteri 92 (SPEG); — On *R. villosus*, U.S.A., Atkinson 2308; — On *Rubus* spp., Brazil, Puiggari 2722 (type of *M. puiggarii*), Rick, s. n. (F); San Thomé, Moller, 1885; Porto Rico, Stevens 8270, 8892, 8650; Venezuela, Chardon & Toro 478, 2750, 1844 (CUP); Costa Rica, Stevens 339, 103; Hawaii, Stevens 1029, 1155, 1135; Uganda, Hansford 774, 1087, 1339, 1796, 2273, 2431, 3412; Formosa, Yamamoto s. n.; China, Cheo 1615-a (F); Japan, Rehm, Ascomyc. 2132 (? type of *M. rubicola*); — On *Geum chilense*. Chile, Neger (type of *M. autumnalis*); Brazil, Bornmuller 164-b (S); — On *G. brasiliense*, Brazil, Ule, Herb. brasil 1657; — On *Cliffortia ferruginea* and *C. strobilifera*, South Africa, PRET 10861, 10859, 11442; — On *Leucosidea sericea*, South Africa, PRET 14130, 11357; — *Rubus jamaicensis*, Guadeloupe, Juss 1078, 1104 (F) — On *Rubus* sp., Tonkin, Duport 2, p. p., (F); Ecuador, Lagerheim (F); San Thome, Moller (F).

(529) *Appendiculella acaenae* Hansf., Sydowia **9**: 28. 1955.
(2201.4230)

Cols. mostly epiphyllous, to 1 mm. diam. or confluent, becoming rather dense. Hyphae rather crooked, cells mostly 25—30×6—7 μ, branching opposite or irregular at varied angles, becoming closely interwoven-reticulate. Ch. alternate, subantrorse ,straight or bent-20—40 μ long; hc. irregularly rounded-angulose to shallowly sub. lobate, 12—21×12—17 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 15—20×7—9 μ. P. in central group, to 290 μ diam., verrucose; app. numerous, bent, obtusely conoid, dark brown, transversely striate, obtuse, to 70 μ long; about 25 μ diam. at the base, surface smooth. Sp. bent fusoid, ends obtusely conoid, 3-septate, slightly constricted, 34—43×12—13 μ.

On *Acaena* sp., Ecuador, Lagerheim in Rehm, Ascomyc. 1121 (S, P.).

(530) **Appendiculella photinicola** (Yamam.) Hansf., comb. n.
= *Irene photinicola* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 48. 1941.

Cols. mostly hypophyllous, effuse, to 10 mm. diam. or confluent. Hyphae more or less undulate, cells 30—48×6—8 μ, branching opposite or irregular, loosely reticulate. Ch. alternate, 21—35 μ long; spreading, straight or bent; stc. cuneate, 7—14 μ long; hc. deeply 2—5-stellate-lobate, 13—16×9—16 μ. Mh. numerous, mixed with ch., alternate, ampulliform, 16—23×7—9 μ. P. scattered, verrucose, to 225 μ diam.; app. 2—3, slightly curved, rigid, obtuse, 35—60 μ long by 19—30 μ wide at the base. Sp. cylindric, obtuse, often slightly bent, 3-septate, slightly constricted, 32—40×11—15 μ.

On *Photinia kudoi*, Formosa, Yamamoto, type (not seen by present author.

(531) *Asteridiella rhaphiolepsis* (Yamam.) Hansf., Sydowia **10**: 50. 1957.

(2101.5330)

= *Irenina rhaphiolepsis* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 50. 1941.

Cols. epiphyllous, to 5 mm. diam., dense. Hyphae straight to slightly undulate, cells mostly 15—30×7—9 μ, branching opposite or alternate, closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 22—32 μ long; stc. cylindric to cuneate, 6—14 μ long; hc. irregularly 2—5-lobate, 14—23×12—23 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—25×7—9 μ. P. in close central group, verucose, to 290 μ diam.; surface cells mammillate, to 30 μ high. Sp. slightly bent, cylindric to subfusoid, obtuse, slightly constricted, 44—58×16—22 μ.

On *Rhaphiolepsi indica*, Formosa, Yamamoto, type; — On *Prunus javanicus*, Java, BO 4635, 6049, with sp. to 50×19 μ.

(532) *Asteridiella pygei* Hansf., Sydowia Beih. **1**: 97. 1957.

(2101.5230)

Cols. epiphyllous, dense, smooth, to 2 mm. diam. Hyphae substraight, branching opposite, acute, closely radiating-reticulate, cells mostly 30—40×7—8 μ. Ch. alternate, subantrorse, straight or bent, 18—30 μ long; stc. cuneate, 4—9 μ long; hc. irregularly rounded-angulose to lobate, versiform, 14—21×11—10 μ. Mh. mixed with ch., alternate, ampulliform, 17—22×7—9 μ, very few. P. in central group, rough, to 290 μ diam.; surface cells conoid, obtuse, to 30 μ high, not forming appendages. Sp. bent, ellipsoid, obtuse, 3-septate, constricted, 46—53×17—20 μ.

On *Pygeum africanum*, South Africa, Doidge in PRET 1761, type

(533) *Asteridiella rosae* Hansf., Sydowia **10**: **000**. 1957.

= *Irenina rosae* Hansf., Farlowia **3**: 273. 1948.

Cols. epiphyllous, to 2 mm. diam. or numerous and confluent, thin to subdense. Hyphae sinuous to crooked, cells mostly 20—25×6—7.5 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, often bent, 15—22 μ long; stc. cuneate to cylindric, straight or bent, 3—10 μ long; hc. straight or bent, clavate and entire to irregularly sublobate, 9—15×8—14 μ. Mh. scattered amongst ch., alternate, conoid to ampulliform, 13—20×7—8 μ. P. scattered, verrucose, to 240 μ diam.,s urface cells obtuse conoid to mammillate, up to 20 μ high; appl none. Sp. cylindric, obtuse, often bent, 3-septate, slightly constricted, 34—40×11—13 μ.

On *Rosa roxburghii*, China, Cheo 273 (type), 182, 174 (F).

(534) *Asteridiella prunicola* (Speg.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola prunicola* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 353. 1924.

= *Irenina prunicola* (Speg.) Stev., Ann. Mycol. **25**: 460. 1925.

Cols. epiphyllous, dense, smooth, to 1.5 mm. diam. Hyphae substraight, branching opposite or irregular, acute to wide, becoming closely reticulate, cells mostly 25—30×8—9 μ. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. clavulate to cylindric, entire or slightly angulose, often bent, 14—20×9—12 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 18—22×7—8 μ. P. in loose central group, verrucose, to 250 μ diam. Sp. ellipsoid, often slightly bent, obtuse, 4-septate, constricted, 40—45×19—20 μ.

On *Prunus subcoriacea*, Argentina, SPEG 1806, type.

(534-a) **Asteridiella duportii** Hansf., sp. n.

Plagulae epiphyllae, usque ad 1.5 mm. diam., vel numerosae et subconfluentes, leves, densae. Hyphae brunneae, tortuosae, opposite lateque ramosae, dense intertexto-reticulatae, cellulis plerumque 15—27×5—7 μ. Hyphopodia capitata alternata, antrorsa vel patentia, subrecta vel saepius cruvata, 17—28 μ longa; cellula basali cuneata vel cylindracea, 3—11 μ longa; cellula apicali subglobosa, ovata vel irregulariter angulosa, 10—18×9—16 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 15—21×6—7 μ. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam., cellulis parietis obtuse conoideis, usque ad 15 μ alt. Sporae atrobrunneae, oblongae vel ellipsoideae, obtusae, 4-septatae, constrictae, 39—45×17—19×14—15 μ.

Hab. in foliis *Rubi* sp. indet., Cho Gauh, Tonkin, Duport 2 in Herb. Patouillard (F).

(535) *Asteridiella rubi* (Stev. & Rold.) Hansf., Sydowia **10**: 50. 1957.

= *Irenina rubi* Stev. & Rold., Philipp. Journ. Sci. **56**:52. 1935.

Cols. epiphyllous, to 1 mm. diam. or subconfluent, thin. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, subantrorse, straight or slightly bent, 13—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose, entire, 10—13×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×7—8 μ. P. few, slightly verrucose, to 150 μ diam., surface cells obtusely rounded, to 10 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—36×13—14 μ.

On *Rubus rosaefolius*, Philippines, Stevens 193, 1472 (type), 1549.

In these collections this occurs mixed with *Appendiculella calostroma*, very distinct with its sublobate hypopodia and colonies arising from 3-septate spores; these were originally described as *Irenina rubi* var. *angulata*.

(536) *Meliola rubi* Stev. & Rold., Philipp. Journ. Sci. **56**: 63. 1935.

Cols. hypophyllous, to 3 mm. diam., often numerous and widely

confluent, thin to subdense. Hyphae substraight to undulate or sinuous, cells mostly 20—30×5—7 μ, branching opposite or irregular, acute or wide, loosely to rather closely reticulate. Ch. opposite or alternate in varying proportions, spreading or antrorse, straight or bent, 12—17 μ long; stc. cylindric, 2—5 μ long; hc. ovate to oblong, straight or bent, sometimes slightly rounded-angulose, 8—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—8 μ. Ms. thinly scattered, straight, wimple, acute, to 300×6—8 μ. P. scattered, sligh verrucose, to 120 μ diam. (? immature). Sp. oblong, obtuse, 4-septate, constricted, 45—52×16—17×13—14 μ, in side view the middle cell the largest.

On *Rubus moluccanus*, Philippines, Stevens 1469, type (FLS, CUP).

(537) *Meliola formosensis* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 18. 1941.

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae undulate to crooked, branching opposite, acute to wide, loosely reticulate, cells 20—35×5—8 μ. Ch. alternate or very rarely opposite, antrorse or spreading, straight or bent, 14—23 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. globose to subglobose, entire, 9—14×9—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23×7—8 μ. Ms. few, grouped around P., straight or slightly flexuous, simple, obtuse, to 330×8—9 μ, gradually attenuate upwards. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted 30—37×12—13×10—11 μ.

On *Rubus formosensis*, Formosa, Yamamoto (Co-type in USDA).

(538) *Meliola rubiella* Hansf., Sydowia Beih. **1**: 115. 1957.

Cols. epiphyllous, very thin and scarcely visible, to 2 mm. diam. Hyphae undulate, branching usually opposite at wide angles, loosely interwoven-reticulate, cells mostly 20—40×5—6 μ. Ch. altrnate, antrorse or spreading, straight or slightly bent, 11—15 μ long; stc. cuneate, 2—4 μ long; hc. subglobose, entire, 9—11×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×6—7 μ, neck elongate. Ms. only around P., straight, simple, acute, to 550×9 μ. P. loosely scattered, globose, verrucose, to 120 μ diam. (? immature). Sp. oblong, obtuse, 4-septate, constricted, 29—33×10—12 μ.

On *Rubus moluccanus*, Philippines, Stevens 1461 (type), 1361, 4226, 4233 (FLS).

Host Family 144. Chailletiaceae.

(539) *Meliola dichapetali* Hansf. & Thirum., Farlowia **3**: 292. 1948.

Cols. epiphyllous, dense, velvety, to 3 mm. diam., crustose. Hyphae substraight, cells mostly 10—20×6—8 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. opposite or

alternate in varying proportions, more or less antrorse, crowded, 15—20 μ long; stc. cuneate to cylindric, 2—9 μlong; hc. ovate to piriform, often slightly bent, entire, 10—14×9—13 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 13—20×7—9 μ. Ms. numerous, scattered, straight, to 280×9—11 μ, apex 2—3-dentate to 20 μ, teeth widely divergent. P. loosely aggregate in centre, almost smooth, to 180 μ diam. Spl cylindric, obtuse, 4-septate, slightly constricted, 39—44×15—17 μ.

On *Dichapetalum gelonioides*, India, Thirumalachar 900, type.

(540) *Meliola scott-elliotii* Hansf. & Deight., Sydowia 10: 88. 1957.

Cols. dense, to 3 mm. diam., somewhat velvety. Hyphae substraight to sinuous, cells mostly 20—30×7—9 μ, branching opposite at acute angles, closely reticulate and nearly solid in places. Ch. alternate or to about 5% opposite, usually bent, 18—28 μ long; stc. cylindric, 3—8 μ long; hc. from globose to elongate piriform, often bent, entire, 13—20×8—14 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. fairly numerous, scattered, straight, simple, obtuse, to 350×9—10 μ. P. scattered, verrucose, immature. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—42×15—16 μ.

On *Dichapetalum toxicarium*, Sierra Leone, *Scott-Elliot* 5688 (= IMI 47516, type).

Host Family 146. Caesalpiniaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3403.4220	Cols. thin; hyphae crooked; hc. small, globose; ps. to 20, to 170 μ long, straight, obtuse, 3-4-septate	*dimorphandrae*	(541)
3401.3220	Cols. dense; hyphae undulate; hc. ovate to globose; ps. few, straight, obtuse, continuous, to 80 μ long	*chamaecristicola*	(542)
3301.3320	Cols. dense; hyphae undulate; hc. ovate, entire; ps. 0—15, obtuse, uncinate to coiled, septate, to 80 μ long	*toruloidea*	(543)

Asteridiella

3103.5330	Cols. dense; hyphae straight; hc. large, globose	*hymenaeicola*	(544)
3101.5220	Cols. subdense; hyphae crooked; hc. large, angulose	*cubitorum*	(545)
3101.4230	Cols. thin; hyphae sinuous; hc. clavateglobose, entire	*cassiaecola*	(546)
3101.3230	Cols. thin; hyphae sinuous to tortuous; hc. globose, entire	*cassiae*	(547)

Meliola

3133.4221	Cols. dense, velvety; hyphae straight; hc. larger, globose-piriform, entire	*daniellae*	(548)

3133.4221 Cols. thin to dense; hyphae sinuous to flexuous; hc. small, subglobose ..... *mezoneuri* (549)

3133.3222 Cols. thin; hyphae straight; hc. small, globose-oblong ..... *schizolobii* (550)

3133.3221 Cols. very thin; hyphae undulate; hc. ovate, entire ..... *schizolobii* var. *bauhiniae* (551)

3131.3221 Cols. subdense, velvety; hyphae crooked; hc. small, globose-ovate; ms. cristate ..... *hoffmannseggiana* (552)

31⅓1.4223 Cols. thin; hyphae straight; hc. cylindric to piriform, entire; ms. acute, obtuse or dentate piriform, entire; ms. acute, obtuse or dentate *berliniae* (553)

3133.4221 Cols. dense; hyphae straight; hc. globose .... *berliniae* var. *densa* (554)

31⅓3.3222 Cols. thin; hyphae straight; hc. oblong or angulose; ms. obtuse or dentate ..... *tounateae* (555)

31⅓1.3222 Cols. dense; hyphae undulate to sinuous hc. oblong to subglobose; ms. obtuse or dentate . *caesalpiniae* (556)

31⅓1.3222 Cols. thin, subvelvety; hyphae crooked; hc. small, globose; ms. acute or dentate ..... *theissenii* (557)

312 × 3221. hc. irregularly 4-5-angulose; ms. arcuate to uncinate ..... *curviseta* (558)

3121.4222 Cols. thin, velvety; hyphae undulate; hc. globose to piriform; ms. obtuse, uncinate or coiled ..... *pazschkeana* (559)

3121.4222 Cols. thin to dense, velvety; hyphae substraight; hc. oblong to sublobate; ms. widely uncinate, obtuse ..... *pazschkeana* var. *macropoda* (560)

3123.3221 Cols. thin; hyphae crooked; hc. ovateglobose, entire; ms. obtuse, contorted above ..... *cubitella* (561)

3113.5332 Cols. dense, velvety; hyphae straight to undulate; hc. oblong or angulose; ms. obtuse or acute ..... *tamarindi* (562)

3113.4222 Cols. thin; hyphae straight or undulate; hc. oblong-ovate; ms. acute..... *bauhiniicola* (563)

3113.4222 Cols. thin; hyphae straight, cells long; hc. cylindric, entire; ms. acute ..... *copaiferae* (564)

3113.4222 Cols. thin to subdense; hyphae substraight to flexuous; hc. subglobose to ovate, entire; ms. simple, obtuse ..... *aethiops* var. *longiseta* (564a)

3113.3221 Cols. thin; hyphae crooked; hc. ovate to globose; ms. acute ..... *aethiops* var. *trompillana* (565)

3113.3221 Cols. thin; hyphae straight; hc. small, globose; ms. acute..... ..... *aethiops* var. *minor* (566)

3113.3221 Cols. subdense, subvelvety; hyphae straight; hc. ovate to oblong; ms. acute ..... *erythrophloei* (567)

3112.3221 Cols. subdense, subvelvety; hyphae straight; hc. ovate-piriform; ms. acute or obtuse ..... *aethiops* (568)

3112.4221 Cols. subdense; hyphae substraight; hc. ovate to subconoid; ms. acute ..... *caesalpiniicola* (568a)

3113.3221	Cols. thin; hyphae substraight to undulate; hc. ovate to oblong; ms. obtuse	*holocalicis*	(575)
3111.4231	Cols. dense; hyphae flexuous; hc. clavate; ms. obtuse	*gleditschiae*	(569)
3111.4221	Cols. dense, velvety, caulicolous; hyphae crooked; hc. globose-ovate; ms. subacute....	*aliena*	(570)
3111.32×3	Cols. thin; hyphae straight to undulate, cells long; hc. cylindric to lobate; ms. acute	*burgoensis*	(571)
3111.3221	Cols. thin; hyphae substraight to undulate; hc. small, subglobose to angulose; ms. obtuse, sometimes torulose	*subtortuosa*	(572)
3111.3221	Cols. dense, velvety; hyphae undulate; hc. globose-oblong; ms. subacute	*bauhiniae*	(573)
3111.3221	Cols. thin; hyphae undulate to flexuous; hc. globose to piriform; ms. obtuse	*chamaecristae*	(574)
311.2221	.....	*gliricidiae* var *pinetori*	(576)

(541) *Irenopsis dimorphandrae* Hansf., Sydowia 9: 38. 1953.

Cols. hypophyllous, thin, to 10 mm. diam. or confluent. Hyphae crooked to sinuous, cells 20—40×5—8 μ, branching alternate or irregular, loosely wavy-reticulate and interwoven. Ch. alternate or about 2% opposite, straight or bent, 10—15 μ long; stc. cylindric, 2—5 μ long; hc. globose, ovate or piriform, entire, 8—12×7—10 μ. Mh. mixed with ch., alternate, ampulliform, 18—25×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam., the upper half with up to 20 erect-spreading, straight, translucent pale brown, obtuse, smooth setae, to 170×7—8 μ, 3—4-septate, sometimes slightly swollen at apex, wall 2 μ thick. Sp. ellipsoid to subfusoid, ends obtusely conoid, 4-septate, 36—43×15—17 μ, the middle cell largest.

On *Dimorphandra* sp., British Guiana, Stevens 380, type, 810 p. p., (FLS, K).

(542) *Irenopsis chamaecristicola* Stev., Ann. Mycol. 25: 436. 1927.
= *Meliola chamaecristicola* Stev., Illinois Biol. Monogr. 2: 26. 1916.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae substraight to undulate, cells mostly 15—30×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or bent, 14—18 μ l9ng; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose to pririform, entire, 9—14×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—18×6—8 μ. P. scattered, verrucose, to 170 μ diam.; ps. few, straight or slightly bent near apex, simple, obtuse, continuous, smooth, to 80×5—7 μ, slightly attenuate upwards, thin-walled. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—38× 13—15×11—13 μ.

On *Chamaecrista granulata*, Porto Rico, Stevens 6113, type; — On *Cassia* sp., Brazil, Ule, s. n. (S).

(543) *Irenopsis toruloidea* Stev., Ann. Mycol. **25**: 441. 1927.
= *Meliola toruloidea* Stev., Illinois Biol. Monogr. **2**: 25. 1916.
= *Irene toruloidea* (Stev.) Stev. & Tehon, Mycologia **18**: 18. 1926.

Cols. amphigenous, mostly hypophyllous, to 4 mm. diam., subdense. Hyphae substraight to undulate, cells mostly 25—30×6—8 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 15—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate to cylindric, entire, sometimes bent, 10—17×9—12 μ. Mh. mixed with ch., alternate, ampulliform, 15—20×7—8 μ. P. scattered, verrucose, to 17 μ diam.; ps. 6—15, erect-spreading, simple, obtuse, 2—4-septate, to 80×7—8 μ, apex uncinate to coiled. Sp. oblong to subellipsoid, obtuse, 4-septate, 29—35×14—16 μ.

On *Cassia quinquadrangularis*, Porto Rico, Stevens 8394, type, 206, 8980, 8468; — On *C. pilifera*, Panama, Stevens 105; — On *C. bacillaris*, Trinidad, ICTA 1090, 1699; — On *C.* sp., British Guiana, Stevens 119; Trinidad, Stevens 941, 937; Costa Rica, Stevens 859, 321, 551; Panama, Stevens 960, 1324, 1094, 751; — (On *Inga laurina*, Porto Rico, Stevens 8135.) — On *Cassia hoffmannseggiana*, Brazil, Baker, Plants of Amazon 362, Baker in Rehm, Ascomyc. 1798, with ps. 0—6, to 55 μ long, continuous, obtuse, apex bent, uncinate or closely twisted; sp. 35—40×13—15 μ.

(544) *Asteridiella hymenaeicola* (Frag. & Cif.) Hansf., Sydowia **10**: 48. 1957.
= *Meliola hymenaeicola* Frag. & Cif., Bol. Soc. Esp. Nat. Hist. **26**: 471. 1926.
= *Irenina hymenaeicola* (Frag. & Cif.) Stev., Ann. Mycol. **25**: 462. 1927.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae straight, cells 12—20×6—8 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or to 20% opposite, subantrorse, straight, 16—23 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. globose to widely clavate or piriform, entire, 12—16×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform. P. scattered, each on close, solid, radiate subiculum of exhyphopodiate hyphae ,verrucose, to 250 μ diam., surface cells obtuselly conoid, projecting to 25 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 45—54×20—24 μ.

On *Hymenaea* sp., San Domingo. Ciefrri, Mycofl. doming. exs. 75. type; Brazil, Baker, s. n. (S).

(545) *Asteridiella cubitorum* (Stev. & Tehon) Hansf., Sydowia **10**: 47. 1957.
= *Irene cubitorum* Stev. & Tehon, Mycologia **18**: 19. 1926.
= *Irenina cubitorum* (Stev. & Tehon) Stev., Ann. Mycol. **25**: 466. 1927.

Cols. hypophyllous, to 5 mm. diam., subdense. Hyphae very

crooked and often geniculate, cells 25—35×7—10 μ, branching alternate or irregular, closely reticulate and interwoven. Ch. alternate or more distant, straight or bent, spreading, 25—40 μ long; stc. cylindric, often bent, 4—20 μ long; hc. versiform, clavate and entire, to irregularly rounded-angulose, rarely sublobate, 13—22×11—18 μ. Mh. mixed with ch., alternate, ampulliform, 20—25×8—10 μ. P. scattered, verrucose, to 150 μ diam., surface cells obtusely conoid to 15 μ high. Sp oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 44—54×15—18×12—15 μ.

On *Dimorphandra* sp., British Guiana, Stevens 810, type (FLS, F, CUP, K), 417 p. p.

In both collections this is mixed with *Irenopsis dimorphandrae*.

(546) *Asteridiella cassiaecola* (Batista & Silva) Hansf., Sydowia **10**: 47. 1957.

= *Irenina cassiaecola* Batista & Silva, An. IV Congr. Nac. Soc. Bot. Brazil, 1953, p. 91.

Cols. epiphyllous, thin to subdense, to 2 mm. diam. Hyphae substraight to undulate, branching opposite, acute to wide, becoming closely reticulate, cells 18—24×7—9 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 17—22 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose to piriform, entire, 12—17×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×6—8 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—42×13—15×11—12 μ.

On *Cassia bacillaris*, Brazil, Lopes in IMUR 11068, type.

(547) **Asteridiella cassiae** (Cif.) Hansf., comb. nov.

= *Meliola (Irenina) cassiae* Cif., Mycopathologia **7**: 108. 1954.

Cols. epiphyllous, to 1 mm. diam. or sometimes confluent. Hyphae much branched, 6—8 μ thick, angulose to tortuous, commonly sinuous. Ch. alternate or unilateral; stc. 2—4 μ long; hc. globose to ovoid, entire or angulose, 13—14×10—11 μ. Mh. few, ampulliform with long neck. P. scabrid, to 210 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 33—37×10—12 μ.

On *Cassia pedicellaris*, San Domingo, Ekman 3352, type (not seen by present author).

(548) *Meliola daniellae* Hansf. & Deight., Mycol. Paper, IMI **23**: 22. 1948.

Cols. epiphyllous, velvety, subdense, to 4 mm. diam. Hyphae straight or slightly undulate, cells 20—40×7—8.5 μ, branching opposite, acute, closely reticulate. Ch. alternate or to 10% opposite, antrorse or spreading, usually straight, 12—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to piriform or ovate, entire, 8—17×9—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—10 μ. Ms. scattered, straight, to 220×7—9 μ, apex

2—4-dentate to 10 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 40—47×16—19 μ.

On *Daniella thurifera*, Sierra Leone, Deighton 1430, type.

(549) *Meliola mezoneuri* Hansf. & Deight., Mycol. Paper, IMI **23**: 23. 1948.

Cols. epiphyllous, rarely also hypophyllous, thin to dense, to 4 mm. diam. Hyphae sinuous to flexuous or crooked, cells 15—25× 5—7 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate or to 40% opposite, spreading, straight or somewhat bent, 11—18 μ long; stc. cylindric, 2—7 μ long; head cell subglobose to oblong, entire, straight or bent, 9—13×7—11 μ. Mh. mixed with ch., few, opposite or alternate, rarely ternate, ampulliform, 13—20×7—9 μ. Ms. scattered, straight, to 280×6—9 μ, rarely to 480 μ long, apex 2—4-dentate, to 8 μ, rarely simple and acute. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 32—41×12—16 μ.

On *Mezoneurum benthamianum*, Sierra Leone, Deighton 1886, type, 1813, 953, 2405, 2217; — On *Dialium guieense*, Sierra Leone, Deighton 1875.

(550) *Meliola schizolobii* Syd., Ann. Mycol. **14**: 76. 1916.

Cols. epiphyllous, to 6 mm. diam., thin. Hyphae straight, cells 20—30×6—7 μ, branching opposite, acute, loosely reticulate-radiating. Ch. alternate or opposite, antrorse or spreading, usually straight, 11—15 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. globose to oblong, entire, 8—12×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. Ms. numerous, straight, to 380× 6—8 μ, apex 2—4-dentate to 12 μ, or very shortly furcate with dentate branches. P. scattered, verrucose, to 140 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 31—37×12—14×10—12 μ.

On *Schizolobium excelsum*, Brazil, Ule, Herb. brasil. 3495, type, (S, ex Sydow).

(551) *Meliola schizolobii* Syd. var. *bauhiniae* Hansf., Sydowia **10**: 88. 1957.

Cols. epiphyllous, very thin, to 2 mm. diam. or confluent. Hyphae undulate to sinuous, cells 20—30×5—7 μ, branching opposite or irregular, acute to wide, loosely interwoven-reticulate. Ch. opposite (to 5%) or alternate, more or less antrorse, usually bent, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. ovate to cylindric, usually bent, entire, 8—13×6—10 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform, 15—20×6—7 μm, neck elongate. Ms. thinly scattered, mostly grouped around P., substraight, to 270×8 μ, apex finely dentate to 8 μ. P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—37×12—13×8—10 μ.

On *Bauhinia cumanensis*, Venezuela, Chardon 927, type (CUP).

(552) **Meliola hoffmannseggiana** Hansf., nom. n.
= *Meliola cassiicola* Hansf., Proc. Linn. Soc. London **165**: 172. 1955. (non M. *cassiaecola* (Batista & Silva) Cif. in Mycopathologia **7**: 89, 1954).

Cols. hypophyllous, to 6 mm. diam., velvety, subdense. Hyphae flexuous to very crooked, cells mostly 20—25×6—7 μ, branching opposite or irregular, closely interwoven-reticulate. Ch. alternate only, spreading, usually straight, 11—15 μ long; stc. cylindric, 2—5 μ long; hc. globose to ovate, entire, 9—12×7—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. scattered and grouped around P., straight, to 250×6—7 μ, apex cristate-dentate to 10 μ. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—33×11—12 μ.

On *Cassia hoffmannseggiana*, Brazil, Baker, Plants of Amazon 362 p. p., type; Baker in Rehm, Ascomyc. 1798 (F); — On *C. bacillaris*, Brazil, IMUR 11068.

(553) *Meliola berliniae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 23. 1948.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight, cells mostly 25—40×6—8 μ, branching opposite, acute to wide, loosely reticulate. Ch. alternate (much less than 1% opposite), straight, antrorse or spreading, 14—23 μ long; stc. cylindric, 3—6 μ long; hc. cylindric to piriform, entire, 10—16×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×8—11 μ. Ms. scattered thinly, and grouped around P., to 550×7—9 μ, straight, simple, acute to slightly obtuse, or rarely 2—3-dentate to 10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41×13—15 μ.

On *Berlinia grandiflora* ,Sierra Leone, Deighton 1839, type; — On *Afzelia bracteata*, Sierra Leone, Deighton 443; — On *A. africana*, Sierra Leone, Deighton 2299, with ch. rarely opposite. — On *A. bella*, Congo Belge, Hendrickx 4040.

(554) *Meliola berliniae* Hansf. & Deight., var. *densa* Hansf., Sydowia **11**: 99. 1958.

Cols. epiphyllous, to 2 mm. diam., or numerous and confluent, dense. Hyphae substraight, cells mostly 20—25×7—8 μ, branching opposite at acute to wide angles, closely reticulate. Ch. alternate or to 75% opposite, antrorse or spreading, straight, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. globose, entire, 9—12×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—9 μ. Ms. thinly scattered and grouped around P., straight, to 280×8—9 μ, apex 2—4-dentate to 12 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—41×13—16 μ.

On *Detarium senegalense*, Sierra Leone, Deighton 1969, type, 5739; — On *Berlinia* sp., Congo, Thollon (P).

(555) *Meliola tounateae* Stev., Ann. Mycol. **26**: 204. 1928.

Cols. amphigenous, thin, idefinite. Hyphae substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. opposite or alternate in varying proportions, spreading, straight or slightly recurved, 14—19 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. ovoid to oblong, entire, 9—13×6—7 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 14—19×6—8 μ. Ms. scattered, straight, to 600×7—9 μ, apex simple and acute to obtuse, or 2—3-dentate up to 30 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×14—15 μ.

On *Tounatea* sp., Panama, Stevens 675, type (FLS).

(556) *Meliola caesalpiniae* Hansf. & Deighton, Sydowia **11**: 100. 1958.

= Meliola aethiops Sacc. var. caesalpiniae Hansf. & Deight., Mycol. Papers, IMI, 23: 22. 1948.

Cols. hypophyllous, subdense, to 3 mm. diam. Hyphae substraight to undulate or sinuous, cells mostly 20—35×6—8 μ, branching opposite or irregular at wide angles, loosely to densely reticulate. Ch. alternate or less than 1% opposite, straight or bent, antrorse to retrorse, 15—20 μ long; stc. cylindric, 3—6 μ long; hc. globose to oblong, entire, 9—15×8—11 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 15—20×7—10 μ. Ms. scattered, straight, to 400×6—8 μ, simple and acute or less commonly obtuse, or 2—4-dentate to 8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong obtuse, 4-septate, slightly constricted, 34—39×12—15 μ.

On *Caesalpinia sappan*, Sierra Leone, Deighton 1926 (IMI 23825), Gold Coast, Deighton CB 895, type (IMI 23826).

(557) *Meliola theissenii* Hansf., Sydowia **10**: 93. 1957.

Cols. epiphyllous, numerous and subconfluent over the leaf, thin, subvelvety. Hyphae crooked to sinuous, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely to rather closely interwoven-reticulate. Ch. alternate, antrorse or spreading, straight or slightly bent, 10—13 μ long (less than 1% opposite); stc. cylindric, 2—3 μ long; hc. globose, entire, 7—10 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—8 μ. Ms. scattered and grouped around P., straight, to 360×7—8 μ, apex simple and acute, or irregularly dentate to 10 μ, often slightly torulose. P. scattered, verrucose, to 160 μ diam. Sp. oblong, ovtuse, 4-septate, constricted, 32—36×11—13 μ.

On *Bauhinia* sp. Brazil, Theissen 12, type (S).

(558) *Meliola curviseta* Rac., Paras. Algen u. Pilze Javas, **3**: 33. 1900.

= *Meliolinopsis curviseta* (Rac.) Beeli, Bull. Jard. Bot. Bruxelles, **7**: 119. 1920.

Cols. epiphyllous or amphigenous, to 3 mm. diam. Hyphae to 10 μ thick, radiating. Hyphopodia "right and left" (? opposite or alternate); stc. short; hc. irregularly 4—5-angulose, 18—22 μ broad. Ms. grouped around P. and scattered over colony, simple, to 250× 12 μ, the upper part arcuate to uncinate. P. to 160 μ diam. Sp. oval, 4-septate, slightly constricted, obtuse, 34—36×14—16 μ.

On *Phanera* sp., Java, Raciborski.

No specimens of this species have become available to the present author.

(559) *Meliola pazschkeana* Gaill., Le Genre *Meliola*, 1892, p. 95.

Cols. thin, to 10 mm. diam. or confluent, somewhat velvety. Hyphae substraight to undulate, cells mostly 20—30×7—9 μ, branching opposite, acute, loosely reticulate. Ch. alternate only, straight or bent, antrorse or spreading, 16—23 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. globose to piriform, entire, 13—17×10—13 μ. Mh. few, mixed with ch., opposite or alternate, 20—25×8—9 μ, ampulliform with elongate neck. Ms. numerous, scattered, simple, obtuse, to 400×8—10 μ, apex broadly uncinate to colied. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×14—18 μ.

On *Bauhinia* sp., Brazil, Ule 1002, type, Ule in Rabh., Fung. europ. 3854.

(560) *Meliola pazschkeana* Gaill. var. *macropoda* Hansf., Sydowia Beih. **1**: 113. 1957.

Cols. amphigenous, thin to dense, becoming velvety, to 3 mm. diam. Hyphar substraight, branching opposite at wide angles, becoming closely reticulate, cells mostly 25—40×8—9 μ. Ch. alternate, antrorse or spreading, usually bent, 28—35 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. oblong-clavate, often bent, entire or irregularly sublobate, 17—24×11—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—28×9—11 μ. Ms. numerous, scattered and grouped around P., simple, obtuse, widely uncinate in upper half, to 330×8—10 μ, attenuate to 5 μ at apex. P. scattered, verrucose, to 195 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—48×15—17 μ.

On *Bauhinia* sp., Honduras, Standley 54062, type (F).

(561) *Meliola cubitella* (Stev. & Tehon) Ciferri, Mycopathologia **7**: 87. 1954.

(3123.3210)

= *Irene cubitella* Stev. & Tehon, Mycologia **18**: 18. 1926.

= *Irenina cubitella* (Stev. & Tehon) Stev., Ann. Mycol. **25**: 461. 1927.

Cols. hypophyllous, to 10 mm. diam., thin. Hyphae crooked, branching opposite or irregular at wide angles, loosely interwoven-reticulate, cells mostly 15—30×5—6 μ. Ch. alternate or to 4% oppo-

site, spreading, usually straight, 9—17 μ long; stc. cylindric or cuneate, 2—8 μ long; hc. globose to ovate, entire, 7—11×5—7 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 15—20×5—7 μ. Ms. thinly scattered, to 240×7—8 μ, simple, enlarged above and variously twisted to contorted, obtuse. P. scattered, slightly verrucose, to 120 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—35×11—13 μ.

On *Cassia* sp., British Guiana, Stevens 193, type (FLS).

Stevens (1928) also included his 941 from Trinidad, and 119 from British Guiana under this species, but re-examination has shown these to belong to *Irenopsis toruloidea*. His own slide of no. 193 shows the mycelial setae described above.

(562) *Meliola tamarindi* Syd., Ann. Mycol. Berlin **10**: 79. 1912.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 20—35×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or to 5% opposite, antrorse or spreading, straight or bent, 15—25 μ long; stc. cylindric, straight or bent, 4—9 μ long; hc. ovate, oblong, cylindric or irregularly rounded-angulose, more or less bent, 11—18×10—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23×7—9 μm, neck narrow, elongate. Ms. nuerous, closely scattered and grouped around P., straight, simple, obtuse to subacute, to 450×8—10 μ. P. scloely scattered, verrucose, to 250 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—59×14—21 μ, the middle cell usually distinctly the largest.

On *Tamarindus indicus*, Philippines, PBS 7416, type; Sydow, Fung. exot. exs. 29; PBS 11002, 16968, 25896, 23909, Clemens 577; Sierra Leone, Deighton 1611, 432, 2377, 1475, 1223, 2393; Gold Coast, Deighton CB 958.

(563) *Meliola bauhiniicola* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 225. 1941.

Cols. epiphyllous, thin to subdense, subvelvety, to 4 mm. diam. Hyphae substraight, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 18—28×6—8 μ. Ch. alternate or opposite, spreading, straight or slightly bent, 14—24 μ long; stc. cylindric, 4—8 μ long; hc. oblong to clavulate, entire, straight or slightly bent, 9—16×7—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—24×6—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 530×8—9 μ. P. in loose central group, verrucose, to 195 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 39—46×16—19×12—14 μ.

On *Bauhinia championi*, Formosa, Yamamoto (co-type in USDA).

(564) *Meliola copaiferae* Hansf. & Deight., Mycol. Paper, IMI **23**: 25. 1948.

Cols. amphigenous, thin, subvelvety, to 10 mm. diam. or confluent. Hyphae substraight, cells mostly 30—45×7—8 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate or to 5% opposite, spreading, straight or bent, 15—23 μ long; stc. cylindric, 4—8 μ long; hc. oblong, straight or sinuous-bent, entire, 11—16×7—9 μ. Mh. mixed with ch., alternate or opposite, narrow ampulliform, to 25×7—9 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, simple, acute, to 320×6—8 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—44×15—17 μ.

On *Copaifera copallifera*, Sierra Leone, Deighton 1472 (type), 2194, 2001, 994.

(564-a) *Meliola aethiops* Sacc. var. *longiseta* Deighton, Sydowia **11**: 98. 1958.

Cols. hypophyllous or rarely also epiphyllous, thin to subdense, slightly velvety, to 5 mm. diam. or confluent. Hyphae flexuous to sinuous (in epiphyllo substraight to undulate), branching opposite at wide angles, loosely to closely reticulate, cells 25—40×5—6 μ. Ch. alternate or up to 20% opposite, spreading, straight or slightly bent, 10—15—(22) μ long; stc. cylindric to cuneate, 2—6—(9) μ long; hc. subglobose to short ovate, entire, straight or slightly bent, 8—12×7—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18×6—9 μ. Ms. scattered, straight, simple, obtuse, to 350×6—8 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—46×15—17×12—14 μ.

On *Distemonanthus benthamianus*, Sierra Leone, King in IMI 46596-a, type.

(565) *Meliola aethiops* Sacc. var. **trompillana** (Toro) Hansf., comb. n.

= *Irenopsis trompillana* Toro, Monogr. Univ. Porto Rico, B: 2: 118. 1934.

= *Meliola aethiops* Sacc. var. *flexuosa* Hansf. & Deight., Mycol. Paper, IMI **23**: 22. 1948.

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae sinuous to crooked, cells mostly 25—30×5—6 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate or to 25% opposite, usually spreading and straight, 10—14 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to ovate, entire, 8—10×7—9 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. few, thinly scattered and grouped around P., straight, simple, acute, to 240×6—7 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—35×10.5—12 μ.

(*On Mimosaceae* indet., Venezuela, Chardon & Toro 871, type).

On *Delonix regia*, Sierra Leone, Deighton 1078.

(566) *Meliola aethiops* Sacc. var. *minor*, Hansf. & Deight., Mycol. Paper, IMI, **23**: 22. 1948.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to slightly undulate, cells mostly 25—30×5—6 μ, branching opposite, acute, loosely reticulate. Ch. opposite or to 30% alternate, spreading, straight, 9—13 μ long; stc. cylindric, 2—3 μ long; hc. globose, entire, 6—11×6—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform. Ms. thinly scattered and grouped around P., straight, simple, acute, to 290×6—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 25—32×8—11μ.

On *Cassia siamea*, Sierra Leone, Deighton 827 (type), 2149, 2130, 2376.

(567) *Meliola erythrophloei* Hansf. & Deight., Mycol. Paper, IMI **23**: 24. 1948.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., or sometimes numerous and confluent, rather dense, thinly and shortly velvety. Hyphae straight, cells mostly 15—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or to 30% opposite, more or less antrorse, usually straight, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. ovate to oblong, entire, 9—12×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—29×8—9 μ. Ms. scattered and grouped around P., few to numerous, straight, simple, acute ,to 280×8—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—40×12—14 μ.

On *Erythrophloeum guineense*, Sierra Leone, Deighton 2392 (type), 2558.

(568) *Meliola aethiops* Sacc., Bol. Orto Bot. Napoli **6**: 41. 1921. = *Meliola javanica* Cif., Mycopathologia **6**: 19. 1951.

Cols. epiphyllous, rather dense, subvelvety, to 3 mm. diam. or confluent. Hyphae straight, cells mostly 30—40×6 μ, branching opposite, acute, loosely to closely radiating-reticulate. Ch. almost entirely opposite, antrorse or spreading, straight or slightly bent, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. oblong, clavate or piriform, entire, 8—11×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute in some collections, obtuse in others, to 280×7—8 μ. P. loosely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—45×14—16×11—12 μ.

On *Cassia fistula*, Singapore, Baker, Fung. malay. 449, type (K, S); Sumatra, Yates 113 (FLS); Sierra Leone, Deighton 3433, 3527; — On *C. siamea*, Java, BO 2342 (type of *M. javanica*), 14513, 10925; — On *C. sieberiana*, Sierra Leone, Deighton 515, 1748, 1431, 2375; — On *C. marginata*, Sierra Leone, Deighton 1512, 4640.

(568 a) *Meliola caesalpiniicola* Deighton, Sydowia **11**: 40. 1958.

Cols. epiphyllous or rarely amphigenous, subdense, to 5 mm. diam. Hyphae substraight to slightly sinuous (sinuous to flexuous on lower surface), branching opposite, acute to wide, closely reticulate, cells mostly 20—30×6—9 μ. Ch. opposite or rarely alternate, usually slightly antrorse, 13—20 μ long, somewhat shorter on lower surface (13—16 μ); stc. cylindric, 2—5 μ long; hc. oblong to ovate or sometimes subconoid, entire, usually straight, 11—15×8—11 μ, on lower surface versiform, 7—13×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—27×6—10 μ. Ms. mostly grouped around P., substraight or slightly bent, simple, gradually attenuate to acute, subacute or rarely obtuse apex, subtorulose above, to 310×6—8 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—46×16—19×10—14 μ.

On *Caesalpinia nuga*, Philippines, Sydow, Fung. exot. exs. 172, type.

(569) *Meliola gleditschiae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 1937. 1912.

Cols. amphigenous, to 3 mm. diam. or confluent over whole leaf, easily secedent, dense. Hyphae flexuous, cells mostly 20—30×6—8 μ, branching opposite, acute or wide, becoming densely interwoven-reticulate. Ch. alternate, spreading or antrorse, usually bent, 18—35 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. ovate to clavate, entire or angulose, often bent, 13—24×11—17 μ. Mh.mixed with ch., opposite or alternate, ampulliform, 20—24×7—8 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse, to 300×9—10 μ. P. scattered, verrucose, to 230 μ diam. Sp oblong to subellipsoid, 4-septate, constricted, obtuse, 41—48×16—18 μ.

On *Gleditschia amorphoides*, Argentina, Venturi in SPEG 515, type; SPEG 508.

(570) *Meliola aliena* Syd., Leafl. Philipp. Bot. **5**: 1535. 1912.

Cols. caulicolous, dense, velvety, to 10 mm. diam. or confluent, strongly adherent. Hyphae crooked, irregularly branched, densely reticulate and almost solid, cells mostly 8—15×10—12 μ. Ch. alternate, antrorse or spreading, straight or bent, 12—21 μ long; stc. 2—5 μ long, cylindric to cuneate; hc. globose to ovate, entire, 11—17×11—15 μ. Mh. not seen. Ms. very numerous, straight, simple, subacute, to 275×10—14 μ. P. scattered, verrucose, to 170 μ diam. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 43—48×14—17 μ.

On *Pahudia rhomboidea* (fide Stevens & Roldan, Philipp. Journ. Sci. 56: 65. 1935), fallen twigs, Philippines, PBS 12586, 12812, 21786 (type) (S).

(571) *Meliola burgosensis* Hansf., Sydowia **9**: 10. 1955.

Cols. hypophyllous, very thin and effuse. Hyphae substraight to slightly undulate, cells mostly 30—50×5—7 μ, branching opposite or

irregular at wide angles, loosely radiating-reticulate. Ch. alternate only, straight or sharply bent, 23—35 μ long, spreading; stc. cylindric, 7—13 μ long; hc. oblong with rounded apex and entire, to variously bent and lobate, 15—23×9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—25×6—8 μ, neck elongate. Ms. almost entirely grouped around P., substraight, simple, acute, to 800×9—11 μ. P. loosely scattered, each on disc surrounded by radiating hyphae, verrucose, immature. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—40×13—14 μ.

On *Bauhinia* sp., Philippines, PBS 27801 p. p., type (mixed with *M. bauhiniae*).

(572) *Meliola subtortuosa* Rehm, Hedwigia **50**: 162. 1901.

Cols. epiphyllous, 3—4 mm. diam., thin, arachnoid. Hyphae substraight to undulate, cells mostly 25—30×5—7 μ, branching opposite at wide angles, loosely reticulate. Ch./alternate, straight or bent, spreading, 12—16 μ long; stc. cylindric, 3—6 μ long; hc. subglobose, piriform, entire or rounded-angulose, straight or bent, 8—13×8—10 μ. Mh. few, mostly separate, opposite or alternate, ampulliform, 13—16×7—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 300×6—8 μ, apex often somewhat torulose. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 30—37×12—13×9—11 μ.

On *Caesalpiniaceae* indet., Brazil, Ule, Herb. brasil. 704 (type (S).

(573) *Meliola bauhiniae* Yates, Philipp. Journ. Sci., C. Botany, **13**: 235. 1918.

Cols. hypophyllous, velvety, to 6 mm. diam., dense. Hyphae substraight to undulate, cells mostly 15—25×6—7 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate only, antrorse or spreading-reflexed, 12—18 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to oblong, entire, straight or slightly curved, 9—14×8—12 μ. Mh. few, mixed with ch., opposite of alternate, ampulliform, 20—25×6—9 μ. Ms. numerous, scattered, straight, simple, subacute, to 250×8 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 29—35×12—14×10—12 μ.

On *Bauhinia* sp., Philippines, PBS 27801 p. p. (mixed with *M. burgosensis*).

(574) *Meliola chamaecristae* Earle, Bull. New York Bot. Gard., **3**: 304. 1905.

Cols. amphigenous and caulicolous, thin, effuse. Hyphae undulate to crooked, cells mostly 25—35×5—7 μ, branching opposite or irregular at varying angles, loosely to rather closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 14—20 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. globose, piriform, or sometimes rounded-angulose, 10—13×8—11 μ. Mh. separate, opposite or alter-

nate, ampulliform, 12—18×7—9 μ. Ms. thinly scattered and grouped around P., simple, straight, obtuse, to 270×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate slightly constricted, 27—32×9—11 μ.

On *Chamaecrista* sp., Porto Rico, Heller 6371, type; — On *C. aeschynomene*, Porto Rico, Whetzel 2634, Chardon 3005 (CUP).

(575) *Meliola holocalicis* Speg. Anal. Mus. Nac. Buenos Aires, **32**: 370. 1924.

Cols. hypophyllous, to 1 mm. diam., thin. Hyphae substraight to undulate, branching opposite, acute or wide, loosely reticulate, cells mostly 15—25×6—7 μ. Ch. alternate or to 60% opposite in some colonies, antrorse or spreading, straight or bent, 15—21 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to oblong, entire, 10—14×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, often closely crowded, 17—25×7—8 μ, neck elongate. Ms. few, scattered, simple, obtuse, to 200×8 μ, probably slightly immature. P. scattered, verrucose, to 180 μ diam./Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×16—18 μ.

On *Holocalyx balansae*, Argentina, SPEG 511, type.

(576) *Meliola gliricidiae* Syd. var. *pinetori* Cif., Mycopathologia **7**: 132. 1954.

(3111.2221)

Differs from type: Cols. usually epiphyllous, usually confluent, punctiform, 1—1.5 mm. diam.; spores smaller, 30 μ or less long.

On *Cassia pinetori* (= *Chamaecrista pinetori*), San Domingo, Ciferri 2728, type (not seen by present author).

Host Family 147. Mimosaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.3220	Cols. dense; hyphae tortuous; hc. subglobose to lobate	*acaciae*	(577)

Irenopsis

3403.4220	Cols. thin to dense; hyphae crooked; hc. small, globose-oblong, entire; ps. 6—20, obtuse, flexuous, to 200 μ	*cathormionis*	(578)
3403.3220	Cols. thin; hyphae undulate; hc. ovoid; ps. 3—9, obtuse, bent to twisted, —120 μ	*ingae*	(579)
3303.4230	Cols. dense; hyphae sinuous; hc. ovate to piriform, entire; ps. 20—30, twisted to contorted, obtuse, to 100 μ	*berggrenii*	(580)
3301.3220	Cols. dense; hyphae undulate; hc. ovate; ps. 0—15, obtuse, uncinate to coiled, to 80 μ	*toruloidea*	(581)

Asteridiella

3101.4230	Cols. thin to subdense; hyphae undulate; hc. large, ovate-clavate, entire	*ingaecola*	(582)

3101.4230 Cols. dense, crustose; hyphae undulate, cells short; hc. globose ..... *pithecolobii* (583)

3101.4220 Cols. thin; hyphae substraight; hc. piriform to angulose ..... *pentaclethrae* (584)

3101.3220 Cols. thin; hyphae tortuous; hc. ovate to angulose ..... *piptadeniicola* (585)

Meliola

3143.4221 Cols. dense, velvety; hyphae substraight to undulate; hc. cylindric; ms. 2-dichotomous .. *oteroana* (586)

3143.3221 Cols. dense; hyphae substraight; hc. large, oblong to piriform ..... *robinsonii* (589)

3133.4221 Cols. thin to subdense; hyphae substraight; hc. small, ovate ..... *albizziae* (590)

3131.3223 Cols. thin; hyphae undulate; hc. narrow clavate-cylindric ..... *albizziae* var. *zygiae* (591)

31⅓1.42×1 Cols. thin to subdense; hyphae substraight; hc. subglobose-piriform or subangulose; ms. obtuse or dentate ..... *acaciicola* (591a)

3131.3221 Cols. thin to dense; hyphae undulate; hc. subglobose; ms. 2-3-dentate to 25 μ, tips obtuse ..... *mimosacearum* (592)

31⅓3.4221 Cols. thin to subdense; hyphae crooked; hc. subglobose; ms. obtuse or dentate ..... *adenantherae* (593)

31⅓3.3222 Cols. thin; hyphae substraight; hc. small, subglobose; ms. acute or dentate ..... *aethiops* var. *minor* (594)

3113.3221 Cols. thin; hyphae sinuous to crooked; hc. oblong, entire; ms. acute ..... *aethiops* var. *trompillana* (595)

3113.3221 Cols. dense; hyphae undulate to sinuous; hc. globose-ovate; ms. obtuse ..... *mimosicola* (596)

31⅓1.4223 Cols. thin; hyphae undulate; hc. oblong to piriform; ms. obtuse ..... *venezuelana* (597)

3113.5223 Cols. thin, subvelvety; hyphae undulate; hc. ovate-cylindric; ms. obtuse ..... *brisbanensis* (598)

3113.4223 Cols. subdense, velvety; hyphae undulate; hc. subglobose-piriform; ms. acute ..... *venezuelana* var. *floridensis* (598)

3113.4231 Cols. dense, velvety; hyphae undulate; hc. ovate-globose; ms. subacute ..... *koae* (599)

3113.3222 Cols. thin; hyphae undulate; hc. globose; ms. acute ..... *johnstonii* (600)

3113.3221 Cols. thin; hyphae substraight to flexuous; hc. oblong-clavate; ms. obtuse, flexuous..... *pithecolobiicola* (601)

3112.3221 Cols. thin; hyphae flexuous to substraight; h. globose-ovate; ms. obtuse ..... *acaciarum* (602)

3112.3231 Cols. thin; hyphae substraight; hc. bent conoid; ms. obtuse ..... *conigera* (603)

3111.4333 Cols. thin to dense; hyphae substraight; hc. globose-piriform; ms. obtuse ..... *piptadeniae* (604)

3111.4221 Cols. dense; hyphae straight; hc. globose to ovate; ms. obtuse ..... *pithecolobii* (605)

(577) *Amazonia acaciae* Frag. & Cif., Bull. Est. Exp. Mocha, San Domingo, **13**: 6. 1928.

Cols. epiphyllous, 1—4 mm. diam., dense, smooth, rarely confluent. Hyphae tortuous, radiating, little branched. Ch. alternate; stc. 3—5 μ long; hc. subglobose, 7—9×7 μ, rarely 3-lobate at apex. Setae none. P. flattened globose, beneath a radiate mycelial layer, to 120 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38×17 μ.

On *Acacia riparia*, San Domingo, Ciferri.

Material of this species has not become available to the present author.

(578) *Irenopsis cathormionis* Hansf. & Deight., Mycol. Paper, IMI **23**: 25. 1948.

Cols. hypophyllous, thin to dense, to 6 mm. diam. Hyphae sinuous to very crooked, cells mostly 15—25×5—6 μ, branching irregular at wide angles, densely reticulate. Ch. alternate or to 40% opposite, often formed well behind the distal septum of parent cell, spreading, straight, 9—13 μ long; stc. cylindric, 2—4 μ long; hc. globose to oblong, entire, 7—10×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—16×5—7 μ. P. loosely scattered, to 180 μ diam., surface cells obtuse conoid; ps. 6—20, erect-spreading, simple, obtuse, slightly flexuous, smooth, to 200×5.5—7 μ, apex often twisted. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—44×15—17.5 μ.

On *Cathormion altissumum*, Sierra Leone, Deighton 1408, type.

(579) *Irenopsis ingae* (Stev. & Tehon) Stev., Ann. Mycol. **25**: 433. 1927.

= *Irene ingae* Stev. & Tehon, Mycologia **18**: 20. 1926.

Cols. hypophyllous, thin, arachnoid, effuse. Hyphae undulate, cells mostly 25—45×4.5—6 μ, branching opposite, acute, loosely interwoven-reticulate. Ch. alternate or opposite, spreading, straight or bent, 15—19 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovoid, entire, 10—15×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—21×6—7 μ. P. scattered, verrucose to 130 μ diam.; ps. 3—9, from upper half of P., erect-spreading, straight below, dark brown, to 120×8—10 μ, apex simple, obtuse, bent to twisted, surface smooth, 1—2-septate. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—40×14—16 μ, the middle cell often slightly the largest.

On *Inga* sp., British Guiana, Stevens 559, type.

(580) *Irenopsis berggrenii* Hansf., Proc. Linn. Soc. London **165**: 166. 1955.

Cols. hypophyllous, scattered, dense, to 3 mm. diam. Hyphae undulate to sinuous, cells mostly 15—25×8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or to about 2% opposite, straight or bent, spreading, 14—30 μ long; stc. cylindric, 4—16 μ

long, often bent; hc. from wide ovate to piriform or cylindric, often irregularly bent, entire, rounded-angulose or sublobate, 10—18× 8—12 μ. Mh. separate, opposite or alternate, ampulliform, 15—30× 7—10 μ. P. scattered, slightly verrucose, to 250 μ diam.; ps. 20—30, erect-spreading, pale brown, indistinctly 1—2-septate, apex simple, obtuse, variously twisted or contorted, surface smooth, to 100×7—10 μ, thick-walled below. Sp. narrow ellipsoid, obtuse, 38—43×12—14 μ, with many abnormal spores only 3-septate.

On *Acacia melanoxylon*, Victoria, Berggren 381, type (K, S); — On *A. linifolia*, New South Wales, Fraser 10-a; — On *A. penninervis*, New South Wales, Fraser 168; — On *A. maidenii*, New South Wales, Fraser 102; — On *A. mabellae*, New South Wales, Fraser 158.

(581) *Irenopsis toruloidea* Stev., Ann. Mycol. **25**: 441. 1927.

For descr. seen under *Caesalpiniaceae*, above.

On *Inga laurina*, Porto Rico, Stevens 8135.

(582) *Asteridiella ingaecola* (Speg.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola ingaecola* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 351. 1924.

= *Irenina ingaecola* (Speg.) Stev., Ann. Mycol. **25**: 457. 1927.

Cols. epiphyllous, dense, smooth, to 1.5 mm. diam. Hyphae straight, branching opposite or alternate at varying angles, becoming closely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, spreading, straight or slightly bent, 18—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate to clavulate, entire, 12—18×8—10 μ. Mh. mixed with ch., in centre of colony, few, alternate or opposite, conoid to ampulliform, 15—22×7 9 μ. P. scattered, verrucose, to 200 μ diam., surface cells obtusely conoid, to 15 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—48×17—20 μ.

On *Inga marginata*, Argentina, SPEG 1821, type; — On *I. fastuosa*, Venezuela, Sydow, Fung. venez. 241, with sp. 38—44× 17—19×14—16 μ.

(583) *Asteridiella pithecolobii* (Yamam.) Hansf., Sydowia **10**: 49. 1957.

(3101.4230)

= *Irenina pithecolobii* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 221. 1941.

Cols. epiphyllous, dense, crustose, to 3 mm. diam. Hyphae straight or slightly undulate, cells mostly 12—16×9—10 μ, branching opposite, very densely reticulate and nearly solid. Ch. alternate, crowded; stc. 3—7 μ long; hc. globose to subglobose, entire. Mh. scattered, opposite or alternate, ampulliform, 14—21×8—10 μ. P. subaggregate in centre of colony, verrucose, to 260 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 44—50×12—20 μ.

On *Pithecolobium lucidum*, Formosa, Yamamoto, type (not seen by present author).

(584) *Asteridiella pentaclethrae* Hansf., Sydowia **10**: 58. 1957.

Cols. amphigenous, thin, to 2 mm. diam. Hyphae substraight, cells mostly 25—40×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or more scattered, spreading or antrorse, straight or bent, 16—23 μ long; stc. short cylindric, 2—5 μ long; hc. piriform, entire or irregularly rounded-angulose, often recurved, 13—19×9—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 15—19×6—8 μ. P. scattered, to 180 μ diam., surface cells rounded, projecting to 10 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 35—44×16—18 μ.

On *Pentaclethra* sp., British Guiana, Stevens 387-a (type), 529, 290; — On ? *Acacia* sp., Costa Rica, Stevens 787, 607, 493, 975 (FLS, F); — On *Pentaclethra filamentosa*, Trinidad, Thaxter 6692 (F).

(585) **Asteridiella piptadeniicola** Hansf., Sydowia comb. nov.

= *Meliola (Irenina) piptadeniae* Cif., Mycopathologia **7**: 173. 1954. (non Hansf. & Deight. 1948).

Cols. large, thinly arachnoid, diffuse, often covering the leaf; hyphae loosely reticulate, tortuous, irregularly branched, 3.5—5.5 μ wide. Ch. alternate or unilateral, few, 10—20 μ apart, hc. ovate to globose, entire or slightly irregular, 7.5—11×5—7 μ; stc. short. Mh. very few, ampulliform, 10—12×3—4 μ, mixed with ch., P. subglobose, glabrous, to 180 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, slightly constricted, 30—35×10—13 μ.

On *Piptadenia peregrina*, San Domingo, Ekman 3102, type (not seen by present author).

(586) **Meliola oteroana** Hansf., sp. n.

Cols. amphigenous, to 4 mm. diam. or confluent, dense, velvety. Hyphae substraight to undulate, cells mostly 15—25×6—8 μ., branching opposite at wide angles, closely reticulate. Ch. opposite or alternate in varying proportions, mostly sharply bent, antrorse or retrorse, 14—20 μ long; stc. cylindric, 2—5 μ long; hc. cylindric, straight or bent, entire, 10—14×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—19×7—8 μ. Ms. numerous, straight, to 250×7—9 μ, apex usually 2-dichotomous with short apreading branches, 1-ry to 12 μ, 2-ry to 15 μ long, tips acute, or 2-dentate to 8 μ. P. loosely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×16—18 μ.

On *Inga* sp., Venezuela, Otero 1644, type (CUP).

(587) *Meliola chagres* Stev., Ann. Mycol. **26**: 178. 1928.

Cols. amphigenous, mostly hypophyllous, thin, to 20 mm. diam. Hyphae straight, cells mostly 20—30×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite or alternate, straight or bent, spreading, 15—18 μ long; stc. cylindric, 2—5 μ long; hc. ovate to cylindric, entire, straight or bent, 11—13×6—8 μ. Mh.

mixed with ch., alternate or opposite, ampulliform, 15—25×6—7 μ, neck elongate, narrow. Ms. scattered, straight, to 170×7—8 μ, apex 2—3-dichotomous with spreading-recurved branches, -1ry to 15 μ, 2-ry to 10 μ, 3-ry short, acute. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 30—35×12—13×10—11 μ.

On *Inga* sp., Panama, Stevens 1288, type (FLS, F).

(588) *Meliola entadae* Hansf., Proc. Linn. Soc. London **160**: 124. 1948.

Cols. hypophyllous, thin, subvelvety, to 5 mm. diam. Hyphae very crooked, cells mostly 15—20×4—5 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or to 15% opposite, spreading, straight or bent, 10—14 μ long; stc. cylindric, 2—5 μ long; hc. narrow clavate, entire or variously deformed, 7—10×4—6 μ. Mh. very few, mixed with ch., opposite or alternate, conoid to ampulliform, 14—18×4—6 μ. Ms. thinly scattered and grouped around P., straight, to 400×7 μ, apex 2—3-dentate to 10 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—41×13—16 μ.

On *Entada gigas*, San Domingo, Ciferri, Mycofl. doming. exs. 151, type.

(588-a) *Meliola entadicola* Deighton, Sydowia **11**: 104. 1958.

Cols. amphigenous, mostly epiphyllous, thin to subdense, velvety, to 5 mm. diam. Hyphae straight, branching opposite, wide, loosely to rather closely reticulate, cells mostly 15—40×5—8 μ. Ch. alternate or to 45% opposite, straight, antrorse, 11—16 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, oblong or elliptic, entire, 9—12×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—8 μ. Ms. scattered and grouped around P., straight to flexuous to 275×7—8 μ, apex 2—4-cristate-dentate to 12 μ, the teeth often denticulate. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—42×13—16×11—12 μ, mostly about 36×14 μ.

On *Entada pursaetha*, Sierra Leone, Deighton 5802 in IMI 56534-a, type; — On *E. mannii*, Sierra Leone, Deighton 2329 (IMI 23798).

(589) *Meliola robinsonii* Syd., Philipp. Journ. Sci., C. Botany, **21**: 135. 1922.

= *Meliola bicornis* Wint. var. *robinsonii* (Syd.) Stev., Ann. Mycol. Berlin, **26**: 189. 1928.

Cols. epiphyllous, dense, to 3 mm. diam., or numerous and widely confluent. Hyphae substraight, cells mostly 20—25×6—7 μ, branching opposite, acute to wide, closely reticulate and in places almost solid. Ch. alternate or opposite, in varying proportions, spreading, straight or slightly bent, 15—23 μ long; stc. cylindric, 3—5 μ long; hc.

subglobose, ovate or oblong-cylindric with rounded apex, often slightly bent, entire, 11—18×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. thinly scattered and grouped around P., straight, to 280×7—8 μ, apex 2—4-dentate to 10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—45×17—18×14—15 μ.

On *Entada phaseoloides*, Amboina, Robinson 2119, type (S); Formosa, Yamamoto (USDA).

(590) *Meliola albizziae* Hansf. & Deight., Mycol. Paper, IMI **23**: 26. 1948.

Cols. epiphyllous, thin to dense, to 3 mm. diam., sometimes numerous and confluent. Hyphae straight to slightly undulate, cells mostly 20—30×7 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 40% opposite, antrorse or spreading, straight or slightly bent, 12—16 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate, entire, 9—12×7—10 μ. Mh. mixed with ch., few to numerous, opposite or alternate, ampulliform to conoid, 15—23×7—8 μ. Ms. thinly scattered, straight, to 280×7—8 μ, apex 2—3-dentate to 10 μ, sometimes the apical portion slightly torulose. P. scattered, globose, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—41×13—14 μ.

On *Albizzia gummifera*, Sierra Leone, Deighton 1756, type, 497, 2040, 978, 1235; Gold Coast, Deighton CB 887, Hughes in IMI 36902, 36903, 36904; Congo Belge, Hendrickx 1153; — On *A. zygia*, Uganda, Hansford 1287: 1947, 3354.

(591) *Meliola albizziae* Hansf. & Deight., var. *zygiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 26. 1948.

Cols. amphigenous, mostly epiphyllous, thin, to 5 mm. diam. Hyphae substraight to slightly undulate, cells mostly 18—30×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or to 10% opposite, straight or slightly bent, spreading or antrorse, 12—22 μ long; stc. cylindric, 2—10 μ lang; hc. narrowly clavate to oblong, entire, straight or slightly bent, 9—15×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—21×6—9 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, to 330×7—8 μ, apex 2—4-dentate to 10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—37×10—13 μ.

On *Albizzia zygia*, Sierra Leone, Deighton 1825 (type), 1915, 435, 1234, 2378, 580-a; Gold Coast, Deighton CB 765; Hughes in IMI 36894, 36895, 36896, 36897, 36899; Congo Belge, Vanderyst 23330 (BRUX); Uganda, Hansford 2612; — On *Samanea sama*, Sierra Leone, Deighton 1369 p. p., mixed with *M. aethiops* var. *minor*; — On ? Pithecolobium sp., Venezuela, *Soltero* 1534 (CUP, F).

(591-a) **Meliola acaciicola** Hansf., sp. n.

Cols. epiphyllous, thin to subdense, to 1 mm. diam. Hyphae substraight to undulate, branching opposite, acute to wide, loosely to closely reticulate, cells mostly 20—32×7—9 μ. Ch. alternate or very rarely (much less than 1%) opposite, straight or bent, spreading or subantrorse, 17—25 μ long; hc. subglobose to piriform, often bent, entire or slightly rounded-angulose, 13—19×11—13 μ. Mh. septate, opposite or alternate, ampulliform, 17—20×7—9 μ. Ms. thinly scattered and grouped around P., straight, to 290×7—8 μ, apex simple and obtuse or 2-dentate to 10 μ. P. in cdntral group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—45× 13—15 μ.

On *Acacia floribunda*, Ecuador, Lagerheim in Herb. Patouillard, type (F).

The colonies in this specimen are somewhat immature, ant it is possible that all mycelial setae eventually become dentate.

(592) *Meliola mimosacearum* Hansf., Sydowia 9:20. 1955.

Cols. mostly epiphyllous, thin to dense, to 1 mm. diam. Hyphae substraight, cells mostly 20—25×6—7 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate only, antrorse or spreading, straight or bent, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to oblong or wide piriform, entire, 11—15×9—13 μ. Mh. separate, alternate or opposite, ampulliform, 12—16×7—8 μ. Ms. mostly grouped around P., more or less straight, to 230×7—9 μ, apex 2—3-dentate or shortly furcate, the tips obtuse, to 18 μ long. P. in close central group, verrucose, to 195 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 31—37×12—13× 10—11 μ.

On *Mimosaceae* indet., Brazil, Ule, Herb. brasil. 1840, type (S); — On *Mimosa casta*, Trinidad, Baker 248 (= IMI 87); — On *M. pudica*, Trinidad, Dale in IMI 115; — On *M. sensitiva*, Venezuela, Sydow, Fung. venez. 57-a, p. p., Sydow, Fung. exot. exs. 1019 (IMI); — On *M. ceratonia*, Porto Rico, Seaver 1022, Whetzel 2571 (CUP), Stevens 7744, 4020, 8599, 8868 (FLS); San Domingo, Ciferri, Mycofl. doming. exs. 344 (CUP, under "*Meliola monochroma* Cif.", ? ined.); — On *M.* sp., Venezuela, Barrus 3711 (CUP).

(593) **Meliola adenantherae** (Cif.) Hansf., comb. n.

= *Meliola ingae* (Stev. & Tehon) Cif., var. *adenantherae* Cif., Mycopathologia 6: 20. 1951.

Cols. epiphyllous, thin to subdense, to 1 mm. diam. or usually numerous and confluent. Hyphae crooked, branching opposite or irregular at wide angles, closely reticulate, cells mostly about 20× 6—7 μ. Ch. alternate or to 2% opposite, spreading or antrorse, 12— 15 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, entire, 9—11 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23×

7—10 μ. Ms. mostly grouped around P., straight, to 300×9—11 μ, simple and obtuse, or 2-dentate to 7 μ .P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—43×14—15× 11—13 μ.

On *Adenanthera microsperma*, Java, BO 7370, type.

(594) *Meliola aethiops* Sacc. var. *minor* Hansf. & Deight. (see above, under *Caesalpiniaceae*).

Cols. epipyhllous, thin, thinly velvety, to 6 mm. diam. Hyphae substraight, cells mostly 25—40×6 μ, branching opposite, acute to wide, loosely reticulate. Ch. alternate or to about 30% opposite, spreading, straight or slightly bent, 9—14 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to short piriform, 7—11×7—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 15—20× 6—9 μ. Ms. numerous, straight, to 360×7 μ, apex simple and acute, or 2—4-dentate to 8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—34×10—13 μ.

On *Samanea saman*, Sierra Leone, Deighton 1664, 1369 p. p., mixed with *M. albizziae* var. *zygiae*, from which it is distinguished by the straighter hyphae with longer cells, by the shorter and wider hc., and by the many simple, acute ms.

(595) *Meliola aethiops* Sacc. var. *trompillana* (Toro) Hansf., (supra, under *Caesalpiniaceae*).

(3113.3221)

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae sinuous to crooked, cells mostly 20—30×5—7 μ, branching usually opposite at wide angles, loosely reticulate. Ch. opposite or alternate in varying proportions, antrorse or spreading, straight or usually more or less bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. subglobose to oblong, entire, often bent, 8—10×6—7 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—7 μ. Ms. few, almost entirely grouped around P., straight or slightly flexuous, simple, acute to subacute, to 250×6—8 μ. P. scattered, slightly verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—34×11—13 μ.

On *Mimosaceae* indet., Venezuela, Chardon & Toro 871, type (CUP).

(On *Delonix regia*, Sierra Leone, see above).

(596) *Meliola mimosicola* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 383. 1924.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae undulate to sinuous, branching opposite at wide angles, closely reticulate, cells mostly 15—25×6—8 μ. Ch. alternate or less than 1% opposite, antrorse or spreading, usually more or less bent, 13—20 μ long; stc. cylindric, 2—8 μ long; hc. globose to ovate, entire, 9—15×8—13 μ. Mh. separate, opposite or alternate, ampulliform, 12—17×7—9 μ. Ms. faily numerous, scattered and grouped around P., simple, obtuse, to 190 μ long

(? immature). P. scattered, immature. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—37×11—12×9—11 μ.

On *Mimosaceae* indet., Paraguay, Balansa 3503, type (P).

It is possible that this is the same as *M. mimosacearum* Hansf., but the material available to me did not show mature setae and perithecia for exact comparison.

(597) *Meliola venezuelana* Orejuela, Mycologia **36**: 437. 1944.

Cols. epiphyllous or less commonly amphigenous, subdense, velvety, to 2 mm. diam. Hyphae undulate to straight, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate or less than 1% opposite, antrorse or spreading, usually bent, 17—25 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. clavate to oblong, often slightly bent, entire, 11—18×9—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—20×7—9 μ. Ms. scattered and grouped around P., fairly numerous, substraight, simple and obtuse to acute, or more commonly 2—4-dentate to 10 μ ,up to 530×8—9 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45×15—17 μ.

On *Pithecolobium ligustrinum*, Venezuela, Barrus 3817 (type), Kern & Toro 1733 (CUP).

(598) *Meliola brisbanensis* Hansf., Proc. Linn. Soc. N.S.W., **78**: 63. 1953.

Cols. amphigenous, thin to dense, to 2 mm. diam. or cinfluent. Hyphae substraight to irregularly flexuous, cells mostly 20—30×6—7 μ, branching opposite at acute to wide angles, becoming closely reticulate in centre. Ch. opposite or alternate, more or less bent, antrorse or spreading, 13—20 μ long; stc. cylindric, 3—7 μ long; hc. ovate, cylindric to slightly irregularly rounded-angulose, often bent, 9—16×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 530×7—9 μ. P. scattered or in a central group, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—41×15—18 μ.

On *Acacia cunninghamii*, Queensland, Bailey 184, type, White 4; — On *A. harpophylla*, Queensland, White s. n.; — On *A. binervata*, New South Wales, Fraser 171, 25, 79; — On *A.* sp., New South Wales, Fraser 234.

(598-a) *Meliola venezuelana* Orejuela var. **floridensis** Hansf., var. n.

Plagulae amphigenae, plerumque epiphyllae, subdensae, velutinae, usque ad 3 mm. diam. vel confluentes. Hyphae brunneae, opposite lateque ramosae, dense reticulatae, cellulis plerumque 18—25×6—8 μ. Hyphopodia capitata opposita vel alternata, recta vel curvata, antrorsa vel patentia, 15—20 μ longa; cellula basali cylindracea vel cuneata,

1—7 μ longa: cellula apicali subglobosa vel piriformi, integra, 11—37 × 9—11 μ. Hyphopdia mueronata illis capitatis commixta, opposita vel alternata, raro etiam ternata, ampullacea, 16—21 × 7—8 μ. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, simplices, acutae, usque ad 700 × 8—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200 μ diam. Sporae atrobrunneae, oblongae, obtusae, 4-septatae, constrictae, 39—43 × 15—17 × 11—13 μ.

Hab. in foliis *Pithecellobii guadeloupensis*, Florida, U.S.A., **Thaxter 7529 (typus), 7528 (Herb. Farlow).**

The chief difference from the type is in the complete absence of dentate setae, and a much higher proportion of opposite hyphopodia.

(599) *Meliola koae* Stev., Bull. Bishop Mus., **19**: 34. 1925.

= *Meliola acaciae-confusae* Sawada, Descr. Catal. Formosa, Fungi, V, in Dept. Agric., Govt. Res. Inst. Formosa, Report **51**: 16. 1931.

Cols. amphigenous, rather dense, subvelvety, to 6 mm. diam. Hyphae substraight to undulate, cells mostly 14—30 × 6—8 μ, branching opposite at varying angles, closely reticulate. Ch. opposite or about 10% alternate, often bent, 12—18 μ long; antrorse or spreading; ste. cylindric, 3—6 μ long; he. globose to oblong, entire, straight or bent, 8—13 × 8—10 μ. Mh. numerous, mixed with ch., opposite, alternate or ternate, ampulliform, 13—17 × 7—10 μ. Ms. numerous, scattered and grouped around P., straight or slightly bent in the miecle, simple, obtuse to subacute, to 250 × 7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 39—50 × 18—20 μ.

On *Acacia koa*, Hawaii, Stevens 163 (type), 521, 415: — On *A. confusa*, Hawaii, Stevens 234, 522; Formosa, Sawada in IMI 31912, type of *M. acaciae-confusae*.

(600) *Meliola johnstonii* Hansf., Sydowia **10**: 76. 1957.

Cols. mostly epiphyllous, thin, to 4 mm. diam. or confluent. Hyphae substraight to sinuous, cells mostly 25—35 × 5—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, or up to 10% opposite, spreading, straight or bent, 11—15 μ long; ste. cylindric, 2—5 μ long; he. globose, entire, 8—11 μ diam. Mh. mixe with ch., alternate or opposite, 20—25 × 7—9 μ, ampulliform, neck elongate. Ms. mostly grouped around P., straight, simple, acute, to 350 × 7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 34—39 × 12—15 μ.

On *Albizzia odoratissima*, Malaya, Johnston 614, type (IMI).

(601) *Meliola pithecolobiicola* Speg., Anal. Mus. Nac. Buenos Aires **32**: 371. 1924.

Cols. epiphyllous, thin, to 1 mm. diam., or confluent over the leaflet. Hyphae substraight to undulate or flexuous, branching opposite, acute, loosely interwoven-reticulate, cells mostly 20—30 × 6 μ.

Ch. opposite or alternate, straight or bent, antrorse, spreading or retrorse, 12—15 μ long; stc. cylindric, 2—4 μ long; hc. oblong to clavate, entire, 8—11×6—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×6 μ. Ms. all grouped around P., flexuous, not uncinate, simple, obtuse, to 200×6—8 μ. P. in loose central group, slightly verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×Y13—15 μ.

On *Pithecolobium hassleri*, Argentina, SPEG 534, type.

(602) *Meliola acaciarum* Speg., Anal. Soc. Cient. Argentina **93**: 113. 1922.

Cols. amphigenous, effuse, thin. Hyphae flexuous to sinuous, branching opposite or irregular, acute to wide, becoming rather closely reticulate, cells mostly 12—20×6—8 μ. Ch. opposite or alternate in verying proportions, spreading or antrorse, straight, 11—16 μ long; stc. cylindric, 2—5)μ long; hc. subglobose to ovate, entire, 8—12×7—10 μ. Mh. mixed with ch., opposite or alternate, 14—18×6—7 μ. Ms. few, thinly scattered, or grouped around P., in some colonies more numerous, to 280×7—8 μ, straight below, somewhat flexuous above, simple, obtuse. P. scattered, verucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×12—13 μ.

On *Acacia pedicellata*, Brazil, SPEG 620, 633; — On *A. polyphylla*, Brazil, SPEG 637, with somewhat straighter hyphae with cells 15—25×5—6 μ, hc. subglobose to oblong, entire, 8—11×7—8 μ, sp. 30—35×12—13 μ.

(603) *Meliola conigera* Stev. & Tehon, Mycologia **18**: 9. 1926. = *Meliola conica* Stev., Ann. Mycol. **26**: 128. 1928.

Cols. amphigenous, covering pinnule, thin. Hyphae substraight, cells mostly 15—20×7—7.5 μ, branching opposite at wide angles, loosely reticulate. Ch. almost entirely opposite save where crowded, straight or bent, antrorse or spreading, 11—15 μ long; stc. cylindric, 2—4 μ long; hc. conoid, obtuse, straight or bent, 9—13×6—8 μ. Mh. separate, opposite or alternate, ampulliform, 17—20×6—7 μ. Ms. few, mostly around P., straight, simple, obtuse, to 260×7—8 μ. P. scattered, verrucose, to 225 μ diam., with radiate subiculum base. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—35×13—14 μ.

On *Pentaclethra macroloba*, British Guiana, Stevens 387-a, (type), 529, 290 (FLS, F); — On *Mimosaceae* indet., Costa Rica, Stevens 787 (type of *M. conica*), 795, 493, 607; — On *Pentaclethra filamentosa*, Trinidad, Thaxter 7408 (F); — In Stevens 787, this is accompanied by *Asteridiella pentaclethrae*.

(604) *Meliola piptadeniae* Hansf. & Deight., Mycol. Paper, IMI **23**: 27. 1948.

Cols. amphigenous, thin to subdense, to 6 mm. diam. Hyphae substraight, cells mostly 15—25×7—8 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate, spreading or antror-

se, straight or bent, 16—22 μ long; stc. cylindric, 3—7 μ long; hc. globose, ovate to piriform, entire, il—16×9—12 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 20—25×7—9 μ. Ms. scattered, straight, simple, otuse, to 700×8—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—49×17—21 μ.

On *Piptadenia elliotii*, Sierra Leone, Deighton 2050, type.

Occasional ch. are opposite in this species.

(605) *Meliola pithecolobii* Stev. & Tehon, Mycologia 18: 9. 1926.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae straight, cells mostly 10—20×7—8 μ, branching opposite at wide angles, closely reticulate and almost solid. Ch. alternate only, subantrorse, mostly straight, 16—22 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose to ovate or piriform, entire, 11—15×7—9 μ. Ms. few, scattered, straight, simple, obtuse, to 250×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—43×14—16 μ.

On *Pithecolobium* sp., Trinidad, Stevens 966, type; — On *P. clypearia*, Java, BO 12853.

Host Family 148. Papilionaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3103.4230	Cols. thin to subdense; hyphae substraight; hc. ovate-piriform or bent; P-cells rounded-conoid, to 10 μ high	*pseudanastomosans*	(606)
3101.4220	Cols. dense; hyphae substraight; hc. globose-ovate, entire	*gesuitica*	(607)
3101.3220	Cols. subdense; hyphae undulate to straight; hc. globose; P-cells conoid, to 20 high μ	*meibomiae*	(608)
3101.4220	Cols. subdense; hyphae substraight; hc. globose; sp. larger	*meibomiae* var. *mucunae*	(609)

Meliola

3143.4221	Cols. subdense; hyphae straight or undulate; hc. ovate-piriform to angulose, large; ms. 1-2-dichotomous, tips obtuse, swollen	*juruana*	(610)
3143.3221	Cols. thin; hyphae straight to undulate; hc. ovate; ms. 2-3-furcate with dentate branches	*amerimni*	(611)

Setae more or less cristate-dentate:

3131.5221	Cols. dense, velvety; hyphae undulate; hc. subglobose to piriform, large; ms. 2-5-furcate, with crest of short teeth	*sclerolobii*	(612)
3131.42×3	Cols. dense; hyphae straight; hc. ovate to piriform, large; ms. 2-4-cristate-dentate	*koriensis*	(613)
3133.4223	Cols. thin; hyphae sinuous; hc. subglobose to piriform; ms. biform: dentate or furcate-cristate	*stizolobii* var.	

		desmodii-salicifolii	(614)
3133.4221	Cols. dense; hyphae substraight; hc. globose-ovate; ms. loosely furcate-cristate	*stizolobii* var. *brasiliensis*	(615)
3133.3223	Cols. dense, velvety; hyphae substraight or undulate; hc. subglobose; ms. closely furcate-cristate	*stizolobii*	(616)
3133.3221	Cols. dense; hyphae substraight to sinuous; hc. subglobose; ms. loosely and irregularly furcate-cristate	*stizolobii* var. *eriosematis*	(617)
3133.3221	Cols. thin; hyphae crooked; hc. small, piriform or bent; ms. densely furcate-cristate	*cristata*	(618)
3131.4222	Cols. thin; hyphae substraight to undulate; hc. large, ovate-piriform; ms. scabrid or finely cristate at apex	*crenatissima*	(619)
3111.4222	Cols. dense; hyphae straight or undulate; hc. large, subglobose to piriform; ms. finely scabrid	*scabriseta* var. *brasiliensis*	(620)
3111.4221	Cols. dense; hyphae undulate; hc. large, ovate-piriform; ms. finely scabrid or apex 2-4-cristate-dentate	*scabriseta*	(621)
3131.3221	Cols. dense; hyphae crooked; hc. globose to piriform, large; ms. scabrid or finely cristate-dentate	*scabriseta* var. *calopogonii*	(622)
3131.3221	Cols. thin; hc. ovate-piriform; ms. simple or 2-furcate, with numerous fine lateral teeth ..	*polyodonta*	(623)
3131.4222	Cols. thin to subdense; hyphae undulate; hc. ovate to angulose; ms. with obtuse teeth	*polyodonta* var. *majo major*	(624)
3131.3221	Cols. thin; hyphae sinuous; hc. malleiform to subglobose; ms. cristate-dentate	*erythrinicola*	(625)
3131.3221	Cols. thin; hc. small, subglobose; ms. bent at apex, with numerous teeth	*heterocephala*	(626)
31⅓3.4223	Cols. thin; hyphae substraight to undulate; hc. oblong-cylindric; ms. acute or 2-5-dentate	*ostryoderridis*	(627)
3133.4222	Cols. thin to dense; hyphae substraight; hc. ovate-oblong; ms. 2-4-dentate	*ostryoderridis* var. *leptoderridis*	(628)
31⅓3.4223	Cols. thin; hyphae substraight; hc. subglobose, piriform or oblong; ms. acute or 2-4-dentate ..	*ostryoderridis* var. *millettiae-sericeae*	(628)
	Ms. simple, or few-dentate:		
31⅓3.3221 3113.3221 31⅓3.4221 3113.4223	Cols. thin to dense, sometimes velvety; hyphae straight to crooked; hc. globose usually small; ms. acute or 2-4-dentate; mh. frequently ternate and crowded	*bicornis*	(630)
(?) 31 3.3221	ms. mostly simple and obtuse	„*desmodii* var. *heterochaeta*“	(631)
3113.3222	Cols. thin; hyphae tortuous; hc. ovate-globose, ms. obtuse to acute	*meibomiae*	(632)

3132.4222 Cols. dense, velvety; hyphae substraight; hc. globose; ms. 2-3-dentate ..... *pterocarpicola* (633)

31⅓3.4221 Cols. dense, velvety; hyphae substraight; hc. ovate-piriform; ms. 2-dentate ..... *constipata* (634)

31⅓3.4221 Cols. very thin; hyphae straight; hc. oblong-piriform, small; ms. 2-3-dentate ..... *platysepali* (635)

31⅓3.4222 Cols. thin; hyphae substraight; hc. subglobose-oblong, larger; ms. acute or 2-3-dentate ..... *baphiae-polygalaceae* (636)

31⅓3.5333 Cols. dense, velvety; hc. subglobose to piriform, large; ms. acute or dentate..... *carvalhoi* (637)

31⅓3.3222 Cols. thin; hyphae straight; hc. oblong to piriform; ms. acute or subdentate ..... *millettiae-sanaganae* (638)

3113.4221 Cols. thin, subvelvety; hc. clavate-cylindric; ms. simple, acute ..... *millettiae-rhodanthae* (639)

31⅓3.3223 Cols. thin; hyphae substraight; hc. clavate-oblong; ms. acute or 2-3-dentate ..... *millettiae-chrysophyllae* (640)

31⅓3.4232 Cols. dense; hyphae substraight; hc. subglobose; ms. acute or subdentate; sp. wide.... *baphiae-nitidae* var. *breviseta* (641)

31⅓3.4222 Cols. dense, subvelvety; hyphae straight to undulate; hc. angulose to sublobate; ms. obtuse, subacute or denticulate ..... *dalbergiae* (642)

31⅓1.4223 Cols. thin to dense; hyphae substraight to crooked; hc. ovate-piriform; ms. acute or dentate; sp. narrow ..... *zollingeri* (643)

31⅓1.4222 Cols. dense, velvety; hyphae undulate; hc. ovate, piriform or angulose to sublobate; ms. acute or dentate ..... *galactiae* (644)

31⅓1.4222 Cols. very thin; hyphae substraight; hc. large, ovate, often bent; ms. acute or 2-4-dentate .. *physostigmatis* (645)

31⅓1.4222 Cols. subdense, velvety; hyphae undulate; hc. large, piriform to angulose; ms. acute, torulose or denticulate ..... *denticulata* (646)

31⅓1.4221 Cols. thin to dense; hyphae undulate; hc. small, globose; ms. acute or dentate ..... *ormocarpi* (647)

31⅓1.4221 Cols. dense; hyphae substraight to undulate; hc. ovate-globose; ms. obtuse or with obtuse teeth ..... *vignae-gracilis* var. *panamensis* (648)

31⅓1.3221 Cols. thin; hyphae undulate; hc. large, subglobose to angulose; mh. separate; ms. 2-3-dentate or acute ..... *mucunae-acuminatae* (649)

3133.3221 Cols. dense, velvety; hyphae tortuous; hc. globose-oblong; ms. dentate ..... *diphysae* (650)

31⅓1.3222 Cols. thin; hyphae straight; hc. globose, ovate or angulose, often bent; ms. obtuse, denticulate or short-furcate ..... *lonchocarpicola* (651)

31⅓3.4224 Cols. dense, velvety; hc. ovate or bent; hyphae straight or undulate; ms. biform: acute or 2-3-dentate and long, or short and more dentate-cristate ..... *teramni* (652)

Ms. all simple:

3113.4233 Cols. dense, velvety; hyphae substraight; hc. ovate or bent; ms. acute ..... *buteae* (653)

3113.4223 Cols. subdense, velvety; hyphae substraight; hc. subglobose to piriform; ms. acute ..... *pictetiae* (654)

3113.4222 Cols. subdense; hyphae straight; hc. globose to wide piriform; ms. acute..... *franciscana* (655)

3113.4222 Cols. thin; hyphae straight; hc. globose to narrow piriform, often bent; ms. acute ..... *abrupta* (656)

3113.4222 Cols. dense, velvety; hyphae substraight; hc. ovate-piriform, crowded; ms. acute ..... *carbonacea* (657)

3113.4231 Cols. subdense; hyphae straight to undulate; hc. ovate-piriform; ms. acute ..... *iindigoferae* (658)

3113.4221 Cols. dense, crustose, caulicolous; hyphae substraight; hc. crowded, globose; ms. ms. numerous, acute..... *kawandensis* (659)

3113.3223 Cols. subdense, subvelvety; hyphae straight; hc. subglobose to oblong; ms. acute ..... *baphiae-nitidae* (660)

3113.3222 Cols. dense, velvety, strongly parasitic; hyphae straight to crooked; hc. globose to piriform; ms. acute to subacute ..... *nyanzae* (661)

3113.3221 Cols. thin; hyphae undulate to sinuous; hc. small, globose-ovate or bent; ms. obtuse, torulose and bent at apex ..... *erythrinae-microptericis* (662)

3112.4230 Cols. thin to subdense, subvelvety; hyphae substraight; hc. small, subglobose, ms. subacute ..... *andirae* (663)

3112.4323 Cols. subdense; hyphae straight; hc. cylindric, elongate; ms. acute..... *inocarpi* (664)

3111.5222 Cols. subdense; hyphae substraight to sinuous; hc. bent, elliptic to sublobate, large; ms. acute; mh. separate ..... *rudolphiae* (665)

3111.5232 Cols. subdense; hyphae straight; hc. large, piriform to angulose, straight; ms. obtuse; mh. separate ..... *tungurahuana* (666)

3111.4233 Cols. thin, subvelvety; hyphae undulate to sinnuous; hc. subglobose to ovate, small; ms. obtuse ..... *euchrestiae* (667)

3111.4222 Cols. subdense, velvety; hyphae undulate to crooked; hc. ovate, angulose to sublobate, large; ms. acute or subacute; mh. separate .. *hendrickxiana* (668)

3111.4222 Cols. thin; hyphae substraight to undulate; hc. piriform to angulose; ms. obtuse ..... *erythrinae* (669)

3111.4223 Cols. subdense, velvety; hyphae undulate; hc. globose to angulose, large; ms. obtuse; mh. mostly separate ..... *erythrinae* var. *psophocarpi* (670)

3111.3223 Cols. thin; hyphae crooked; hc. ovate to bent and angulose-lobate; ms. acute ..... *bantamensis* (671)

3111.4222	Cols. subdense; hyphae substraight; hc. long; ovate; ms. obtuse; mh. separate	*bryae*	(672)
3111.3222	Cols. subdense; hyphae substraight to undulate; hc. subglobose, often bent; ms. acute ...	*banosensis*	(673)
3111.3222	Cols. thin, subvelvety; hyphae substraight to flexuous; hc. large, globose; ms. obtuse to acute	*vignae-gracilis*	(674)
3111.3222	Cols. thin; hyphae crooked; hc. ovate to globose, often bent; ms. acute	*bataanensis*	(675)
3111.4221	Cols. subdense, subvelvety; hc. subglobose to flattened-globose; ms. acute	*pterocarpi*	(676)
3111.4232	Cols. dense, velvety; hc. globose to ovate, often bent; ms. acute; sp. narrow	*desmodii-laxiflori*	(677)
3111.4223	Cols. dense, velvety; hc. globose to ovate; ms. acute; sp. wider	*desmodii-laxiflori* var. *crotalariae*	(677)
		var *crotalariae*	(677a)
3111.3222	Cols. caulicolous, dense, velvety; hc. large, globose; ms. acute	*mucunae*	(678)
3111.3222	Cols. subdense; hc. bent, irregularly angulose to sublobate; ms. acute; mh. separate	*sydowii*	(679)
3111.3221	Cols. thin; hyphae substraight; hc. oyate to		
3111.3221	Cols. thin; hyphae substraight; hc. ovate to sublobate; ms. few, acute	*lonchocarpi*	(680)

It is comparatively an easy matter to separate out certain well defined species on this host family, but one is left with a large number of forms, represented by very numerous collections from all parts of the tropics, which show only minor differences, and at the same time vary considerably from colony to colony, even on the same leaf, and in collections on the same host from different localities. The arangement given below represents the author's reasonably conservative account of the specimens examined; of those here included in Meliola bicornis, many would have been separated as distinct varieties or even species, were it not for the intergrades shown by other specimens.

(606) *Asteridiella pseudanastomosans* (Rehm) Hansf., Sydowia 10: 50. 1957.

= *Meliola pseudanastomosans* Rehm, Hedwigia **35**: 150. 1896.

= *Irenina pseudanastomosans* (Rehm) Stev., Ann. Mycol. **25**: 469. 1927.

= *Meliola pseudanastomosans* Rehm, Hedwigia **35**: 150. 1896.

= *Irenina pseudanastomosans* (Rehm) Stev., Ann. Mycol. **25**: 469. 1927.

Cols. epiphyllous, to 3 mm. diam., thin to subdense. Hyphae straight, cells mostly 15—25×6—8 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate or about 2% opposite, straight or mostly bent, 13—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovate to piriform, usually bent, entire, 10—13×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×

7—8 μ. P. in loose central group, verrucose, to 280 μ diam., surface cells rounded to conoid, to 10 μ high. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 37—43×13—15×10—12 μ.

On *Psoralea* sp. Ecuador, Lagerheim in Rehm, Ascomyc. 1194. (S, F), type; Rabh., Fung. europ. 3847.

(607) *Asteridiella gesuitica* (Speg.) Hansf., Sydowia **10**: 48. 1957.

— *Meliola ïesuitica* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 362. 1924.

= *Irenina gesuitica* (Speg.) Stev., Ann. Mycol. **25**: 457. 1927.

Cols. epiphyllous, to 1 mm. diam., dense, smooth. Hyphae substraight, branching opposite, acute, closely radiating-reticulate, cells mostly 20—25×7—8 μ. Ch. alternate or about 5% opposite, antrorse, straight or slightly bent, 13—19 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose to ovate, entire, 10—16×8—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—20×7—8 μ. P. in loose central group, verrucose, immature (Speg. to 200 μ diam.). Sp. cylindric, obtuse, 4-septate, slightly constricted, 38—44×16—17 μ.

On *Galactia stenophylla*, Argentina, SPEG 1814, type.

(608) *Asteridiella meibomiae* (Stev.) Hansf., Sydowia **10**: 49. 1957.

— *Irenina meibomiae* Stev., Ann. Mycol. **25**: 454. 1927.

= *Meliola meibomiaecola* Cif., Mycopathologia **7**: 154. 1954.

Cols. epiphyllous, thin to subdense, to 4 mm. diam. Hyphae undulate to slightly sinuous, cells mostly 25—30×6—7 μ, branching opposite or irregular at wide angles, rather closely interwoven-reticulate. Ch. alternate, subantrorse, straight, 18—20 μ long; stc. cuneate, 3—6 μ long; hc. globose, entire, 12—15×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—9 μ. P. scattered, rough, to 170 μ diam., surface cells conoid, to 20 μ high. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—39×14—15 μ.

On *Meibomia cana*, Panama, Stevens 1213, type; — On *Desmodium* sp., Trinidad, Dale in IMI 19370; — On *Meibomia supina*, Porto Rico, Stevens 7750 p. p., 3370 p. p.

(609) *Asteridiella meibomiae* (Stev.) Hansf. var. **mucunae** (Cif.) Hansf., comb. n.

= *Meliola meibomiaecola* Cif. var. *mucunae* Cif., Mycopathologia **7**: 154. 1954.

Differs from type: mycelium substraight; ch. few, 25—29×14—18 μ. hc. more or less globose, 24—28 μ diam. sometimes also sublobate; stc. 10—12 μ long; mh. always opposite, ampulliform, 22—26×8—11 μ; P. to 170 μ diam. sp. oblong, not or slightly constricted, 39—42×15—18 μ.

On *Mucuna sloanea*, San Domingo, Ekman s. n., type.

Material of this variety has not become available to the present author for examination; Ciferri states that it is little different from

the type, though his measurements of ch., quoted above, are very different.

(610) *Meliola juruana* P. Henn., Hedwigia **43**: 365. 1904.

Cols. epiphyllous, rather dense, to 4 mm. diam., velvety. Hyphae substraight to slightly sinuous, cells mostly 25—30 × 8—10 µ, branching opposite at wide angles, closely reticulate. Ch. alternate or to 5% opposite, spreading, straight or bent, 20—29 µ long; ste. cylindric to cuneate, 5—9 µ long; hc. ovate, cylindric, piriform, or rarely angulose, often bent, 13—22 × 9—12 µ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—23 × 8—10 µ. Ms. rather few, scattered, straight, to 200 µ high and 9—11 µ thick below, 1—2-dichotomous above, the branches widely divergent or reflexed, 10 to 60 µ long, 2-ry when present to 100 µ, apices obtuse and often slightly inflated. P. scattered, verrucose, to 180 µ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—50 × 16—19 µ.

On *Lonchocarpus* sp., Brazil, Ule, Herb. brasil. 2933, type (S): — On *Swartzia* sp., Brazil, Ule, Herb. brasil. 2935.

According to the drawings in Anal. IV Congr. Soc. Bot. Brazil. p. 101, 1953, *Meliola bicornis* var. *lonchocarpi* Batista in Mycopathologia **5**: 161, 1951, belongs here; but the present author has not seen specimens to confirm this opinion.

(611) **Meliola amerimni** (Stev.) Hansf., comb. n.

= *Meliola bicornis* Wint. var. *amerimni* Stev., Ann. Mycol. **26**: 189. 1928.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to undulate, branching opposite, acute to swide, loosely interwoven-reticulate, cells mostly 20—35 × 5—6 µ. Ch. alternate or opposite, spreading, straight or bent, 12—15 µ long; ste. cylindric, 2—6 µ long; hc. ovate, entire, 8—11 × 6—8 µ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20 × 6—7 µ. Ms. few, mostly grouped around P., to 240 × 6—7 µ, apex 2—3-furcate to 25 µ, branches 2-dentate to 12 µ. P. loosely scattered, to 160 µ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—36 × 10—12 µ.

On *Amerimnon brownii*, Panama, Stevens 355, type (FLS).

(612) *Meliola sclerolobii* Hansf., Sydowia **9**: 24. 1955.

Cols. epiphyllous, rarely amphigenous, closely scattered, to 5 mm. diam., dense, velvety. Hyphae substraight to undulate, cells mostly 15—25 × 7—9 µ, branching opposite, acute, closely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 17—22 µ long; ste. cylindric, 3—7 µ long; hc. globose to widely piriform, entire, 12—16 × 11—14 µ. Mh. separate, opposite or alternate, ampulliform, 15—20 × 7—9 µ. Ms. numerous, scattered and grouped around P., straight, to 190 × 8—9 µ, the apex divided into 2—5 short branches to 25 µ long, these variously dentate to 15 µ, the whole forming a crest of numerous short teeth. P. scattered, verrucose, to 210 µ diam. Sp.

oblong, obtuse, 4-septate, slightly constricted, 45—52×17—19× 14—16 μ.

On *Sclerolobium* sp., Peru, Ule s. n., type (S).

(613) *Meliola koriensis* Deight., Sydowia **11**: 108. 1958.

Cols. epiphyllous, to 1 mm. diam., dense, subvelvety. Hyphae substraight, cells mostly 25—40×7—9 μ, branching opposite at wide angles, becoming closely interwoven-reticulate. Ch. alternate or very rarely opposite, often bent, spreading or antrorse, 18—26 μ long; stc. cylindric, 3—7 μ long; hc. from ovate or piriform to transversely ellipsoid, often bent, entire, 13—21×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23×8—10 μ. Ms. closely scattered, straight, to 550×9—10 μ, apex very shortly 2—4-cristate-dentate. P. scattered, verrucose, immature. Sp. oblong, obtuse, 4-septate, constricted, 40—49×15—19 μ.

On *Leptoderris trifoliata*, Sierra Leone, Deighton 2645, type, 2671, 3505, Pyne 6468 p. p.

(614) *Meliola stizolobii* Hansf. & Deight., var. *desmodii-salicifolii* Hansf. & Deight., Mycol. Paper, IMI **23**: 31. 1938.
= *Meliola bicornis* Wint. var. *tephrosiae* Beeli. Bull. Jard. Bot. Bruxelles 8: 1. 1923.

Cols. epiphyllous, thin, to 2 mm. diam. Hyphae sinuous to flexuous, cells mostly 25—35×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or to 5% opposite, antrorse or spreading, straight or bent, 15—20 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to oblong or piriform, entire, 11—15× 9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—10 μ. Ms. thinly scattered, straight, to 640×8.5—10 μ, apex 2—3-dentate to 20 μ; others grouped around P., 2—3-furcate to 25 μ, the branches dentate to 15 μ, up to 240×9—10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—41×12—14 μ.

On *Desmodium salicifolium*, Sierra Leone, Deighton 1944 (type), 1624; Uganda, Hansford 2845; — On *Desmodium* sp., Jamaica, Hansford s. n. (K); — On *Galactia* sp., Jamaica, Hansford, s. p. (K); — On *Tephrosia elegans*, Congo Belge, Vanderyst 4126, type of *M. bicornis* var. *tephrosiae*, (BRUX); — On *Tephrosia* sp., Togoland, Hughes in IMI 46766.

(615) *Meliola stizolobii* Hansf. & Deight., var. *brasiliensis* Hansf., Sydowia **9**: 76. 1955.

Cols. epiphyllous, dense, to 3 mm. diam., subvelvety, showing as pale brown spots through the leaf. Hyphae substraight, cells mostly 20—30×6—7 μ; branching opposite at wide angles, closely reticulate. Ch. opposite or alternate in varying proportions, usually straight, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. globose or bent ovate, 10—13×7—12 μ. Mh. mixed with ch., opposite or alternate, ampulli-

form, 16—19×7—9 μ. Ms. numerous, scattered and grouped around P., to 280×7—9 μ, apex usually 2—4-furcate and the short branches (—25 μ) again furcate-dentate to 10 μ, the whole rather closely cristate. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse 4-septate, slightly constricted, 35—41×13—16×11—13 μ.

On *Papilionaceae* indet., Brazil, Ule,brasil Herb. . 1151 (S), type.

(616) *Meliola stizolobii* Hansf. & Deight., Mycol. Paper, IMI **23**: 31. 1948.

Cols. epiphyllous, subdense, velvety, to 5 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×6—7 μ, branching opposite at wide angles, loosely to densely reticulate. Ch. alternate or to 20% opposite, spreading, usually straight, 12—17 μ long; stc. cylindric, 2—5 μ long; hc. globose to widely piriform, entire 8—14× 9—14 μ. Mh. mixed with ch., opposite or alternate, rarely ternate, ampulliform, 15—20×7—10 μ. Ms. numerous, biform: (a) scattered over mycelium, straight, to 800×9—10 μ, apex 2—4-dentate to 10 μ, (b) grouped around P., to 160 μ long, apex 2—4-furcate to 15 μ, the branches cristate-dentate. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 31—39×12—14 μ.

On *Stizolobium aterrimum*, Sierra Leone, Deighton 223, type; — On ? *Crotalaria* sp., Sudan, Tarr in IMI 58995; — On *Vigma* sp., Uganda, Hansford 1271.

(617) *Meliola stizolobii* Hansf. & Deight. var. *eriosematis* Hansf. & Deight., Mycol. Paper, IMI **23**: 31. 1948.

Cols. epiphyllous, dense, to 2 mm. diam., or numerous and widely confluent. Hyphae substraight to sinuous, cells mostly 25—35×6—7 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate or opposite (—10%), antrorse or spreading, straight, 11—14 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. subglobose, entire, 9—11 μ diam. Mh. few mixed with ch., opposite or alternate, ampulliform, 15—24×7—10 μ, neck elongate. Ms. scattered, straight, to 280×7—9 μ, apex 2—3-dentate to 15 μ, or 2—3-furcate to 40 μ, with dentate branches; apices very variable and irregular. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—39×11.5—14 μ.

On *Eriosema glomeratum*, Sierra Leone, Deighton 1879 (type), 1752, 2144, 1792, 1599; — On *E. psoraleoides*, Uganda, Hansford 3665, 3663; — On *Tephrosia* sp., Cameroons, Jacques-Felix 2351 (P).

(618) *Meliola cristata* Stev., Ann. Mycol. **26**: 193. 1928.

= *Meliola calopogonii* Stev., l. c., 26: 255. 1928.

Cols. epiphyllous, thin, to 12 mm. diam., often confluent. Hyphae undulate to flexuous, cells mostly 13—30×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or to 10% opposite, spreading, straight or bent, 10—15 μ long; stc. cuneate to cylindric,

2—6 μ long; hc. ovoid, piriform or bent, entire, 7—11×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—17×6—8 μ. Ms. mostly grouped around P., straight, to 230×7—8 μ, apex usually very shortly 2—4-furcate to 10 μ, each branch with several divergent teeth to 8 μ long, the whole forming a close crest, up to 30 μ diam. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—36×10—13 μ.

On *Calopogonium coeruleum*, Panama, Stevens 1355 (type), 466, 891, 384, 981; — On *C.* sp., Panama, Stevens 525 (type of *M. calopogonii*); — On *Phaseolus* sp., British Guiana, Stevens 614, 515; — On *Dioclea* sp., Peru, Ule, Herb. brasil. 3499 p. p., mixed with *M. crenatissima*; — On *Leguminosae* indet., Ecuador, Stevens 44.

(619) *Meliola crenatissima* Syd., Ann. Mycol. **14**: 77. 1916.

Cols. epiphyllous, rather thin, to 4 mm. diam. Hyphae straight or undulate, cells mostly 25—40×6—8 μ, branching opposite at acute to wide angles, loosely radiating-reticulate. Ch. alternate, or less than 1% opposite, antrorse or spreading, straight or slightly bent, 18—27 μ long; stc. cylindric, 3—9 μ long; hc. ovate, piriform or clavate, entire, 13—19×9—13 μ. Mh. few, separate, opposite or alternate, ampulliform, 17—22×8—10 μ, Ms. scattered and grouped around P., substraight, to 340×7—9 μ, the upper part rough with numerous denticulations, the apex irregularly and closely dentate to 10 μ, or sometimes 2-furcate with dentate branches to 25 μ long. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 35—44×15—17×12—15 μ.

On *Calopogonium coeruleum*, Peru, Ule, Herb. brasil, 3494, type; — On *Erythrina rubinervis*, Panama, Stevens 1314; — On *Dioclea* sp., Peru, Ule, Herb. brasil. 3499 p. p.; — On *Gliricidia sepium*, Honduras, Standley 54398 (F).

(620) *Meliola scabriseta* Hansf. & Deight. var. *brasiliensis* Hansf., Sydowia **9**: 47. 1955.

Cols. epiphyllous, subdense, to 1 mm. diam. Hyphae substraight to undulate, cells 20—30×7—8 μ, branching opposite or irregular at wide angles, loosely reticulate, becoming closer in older colonies. Ch. alternate only, spreading or antrorse, usually straight, 20—27 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. subglobose to wide piriform, entire, 14—19×11—14 μ. Mh. mostly separate, alternate, opposite or frequently ternate, ampulliform, 15—24×7—9 μ. Ms. few, scattered and grouped around P., straight, simple, obtuse, to 350×8 μ, the upper part finely roughened-tuberculate. P. in loose central group, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—48×16—18×14 μ.

On *Papilionaceae* indet., Brazil, Ule, Herb. brasil. 2290, type (S).

(621) *Meliola scabriseta* Hansf. & Deight., Mycol. Paper, IMI **23**: 36. 1948.

Cols. epiphyllous, subdense, velvety, to 3 mm. diam. or numerous and confluent. Hyphae sinuous to substraight, cells mostly 25—30× 6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate (less than 1% opposite), antrorse or spreading, 18—24 μ long; stc. cylindric, 4—8 μ long; hc. ovate to piriform, entire, 11—17× 9—13 μ. Mh. separate, or mixed with a few ch., alternate, opposite or ternate, 13—19×7—10 μ. Ms. scattered and grouped around P., straight, simple and obtuse, or rarely 2-dentate, to 280×7—8 μ, the upper part minutely tuberculate-roughened. P. scattered, globose, verrucose, to 180 μ diam. Sp. cylindric. obtuse, 4-septate, constricted, 38—44×14—16 μ.

On Dalbergia sp., Gold Coast, Deighton CB 963; Sierra Leone, Deighton 2404.

On *Dalbergiella welwitschii*, Gold Coast, Vigne 1775 (IMI 67857), Piening 2300 p. p. (IMI 63542-b), Mildbraed 7388 (IMI 67864), all det. F. C. Deighton.

(622) *Meliola scabriseta* Hansf. & Deight. var. **calopogonii** (Stev. Hansf., comb. n.

= *Meliola bicornis* Wint. var. *calopogonii* Stev., Illinois Biol. Monogr. **2**: 64. 1916.

Cols. epiphyllous, dense, to 1 mm. diam., subvelvety. Hyphae sinuous to crooked, cells mostly 20—30×7 μ, branching opposite or irregular, acute to wide, closely interwoven-reticulate. Ch. alternate, antrorse or spreading, straight or bent, 15—24 μ long; stc. cuneate or cylindric, straight or bent, 5—12 μ long; hc. from globose to wide piriform or slightly rounded-angulose, straight or bent, 12—16× 10—15 μ. Mh. mostly separate, alternate or opposite, ampulliform, 12—16×7—9 μ. Ms. fairly numerous, scattered, straight, obtuse with roughened apex, or minutely and irregularly dentate to 5 μ, up to 250×6—8 μ. P. in close central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 31—37×11—13 μ.

On *Calopogonium orthocarpum*, Porto Rico, Stevens 8060, type; Whetzel 614, 2595 (CUP); Stevens 6035, 372, 5087 (FLS).

(623) *Meliola polyodonta* Syd., Ann. Mycol. 24: 306. 1926.

Cols. amphigenous, mostly epiphyllous, arachnoid, thin, to 4 mm. diam. or confluent and larger. Hyphae substraight to sinuous or flexuous, cells mostly 25—35×5—7 μ, branching opposite at acute to wide angles, loosely reticulate. Ch. alternate (less than 1% opposite), usually bent, at wide angles, 11—18 μ long; stc. cylindric, 3—7 μ long; hc. entire, ovate, piriform, or clavate, often bent, 8—12×7—10 μ. Mh. rather few, scattered amongst ch., opposite or alternate, ampulliform, 15—22×6—9 μ, neck elongate. Ms. scattered thinly, and grouped around P., substraight, the upper third rough with fine lateral teeth

to 3 μ long, the apex similarly dentate, or 2-furcate to 50 μ, up to 300×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 27—33×11—13 μ, slightly constricted.

On *Leguminosae* indet., Costa Rica, Sydow, Fung. exot. exs. 620, type, mixed with *M. sydowi*.

(624) *Meliola polyodonta* Syd. var. **major** Hansf., var. n.

Cols. mostly epiphyllous, to 3 mm. diam., thin to subdense, thinly velvety. Hyphae undulate, cells mostly 25—30×6—8 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, usually bent, 16—21 μ long; stc. cylindric, 3—6 μ long; hc. ovate, entire or slightly rounded-angulose, usually bent to transverse, 13—17×10—12 μ. Mh. separate, mostly alternate, ampulliform, 14—19×7—9 μ. Ms. scattered, straight, to 350×8—9 μ, upper part torulose to scabrid, apex simple and obtuse, or usually 2-dentate to 15 μ, teeth obtuse. P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—42×14—15×11—12 μ.

On *Papilionaceae* indet., Venezuela, Chardon & Stelling 844, type (CUP).

(625) *Meliola erythrinicola* Deighton, Sydowia **11**: 41. 1948. (3131.3221)

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae sinuous, opposite and wide branched, loosely reticulate, cells mostly 12—44×4—8 μ. Ch. alternate or to 1% opposite, spreading or subantrorse, straight or malleiform, 12—18 μ long; stc. cylindric, 3—4 μ long; hc. malleiform to wide clavate or subglobose, entire, antrorse- or retrorse-bent, 8—10×8—11 μ. Mh. mixed with ch., numerous, alternate or opposite, ampulliform, 14—22×6—7 μ. Ms. grouped around P., straight, to 200×6—8 μ, apex cristate-dentate or 2—3-furcate to 10 μ with pluri-dentate branches. P. scattered, verrucose to 120 μ diam. Sp. oblong obtuse, 4-septate, slightly constricted 28—39×12—14×9—11 μ mostly about 30×12 μ.

On *Erythrina subumbrans*, Malaya, Johnston 1709 in IMI 63969-a, type.

(626) *Meliola heterocephala* Syd., Ann. Mycol. **14**: 356. 1916.

Cols. arachnoid, amphigenous, to 2 mm. diam., or sometimes confluent. Hyphae crooked, cells mostly 15—20×5—6 μ, branching opposite or irregular at wide angles, becoming closely interwoven-reticulate in centre. Ch. alternate (less than 1% opposite), spreading, straight, 10—14 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose, entire, straight or bent, 7—10×7—10 μ. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform, 15—20×5—7 μ, neck elongate. Ms. mostly around P., to 250×8—10 μ, sometimes the apex swollen to 12 μ, irregularly bent, twisted or uncinate above, with numerous teeth to 10 μ long, irregularly arranged

at apex and along sides of upper part. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—37× 9—13 μ.

On *Desmodium* sp., Philippines, Baker, Fung. malay 251, type; Baker in PBS 3986; PBS 36260, 36229; — On *D. laxiflorum*, Philippines, PBS 23936, Stevens 259, 495, 524, 42, 65, 81, 998, 262, 709, 648 p. p.; — On *D. gangeticum*, Philippines, Stevens 491, 1529.

The specimen PBS 24046 on *D. pulchellum*, Philippines, is closer to *Meliola bicornis* than to the present species, although formerly included here.

(627) *Meliola ostryoderridis* Hansf. & Deighton, Mycol. Paper, IMI **23**: 34. 1948.

Cols. epiphyllous, rarely amphigenous, thin, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×5.5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or 10—50% opposite, spreading, straight or slightly bent, 14—18 μ long; stc. cylindric, 2—5 μ long; hc. oblong, rounded at apex, entire, 10—14×6.5—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, to 20×7—8 μ. Ms. scattered, straight or slightly flexuous, to 600×7—8.5 μ, apex rarely simple and acute, usually 2—5-cristate-dentate to 10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41×13—15 μ.

On *Ostryoderris leucobotrya*, Sierra Leone, Deighton 2322, type, 736, 518, 1233; — On *Leptoderris brachyptera*, Sierra Leone, Deighton 1327; — On *Dalbergia monetaria*, Porto Rico, Stevens 3658, 7577 p. p., 7243, 9016 p. p. (FLS).

(628) *Meliola ostryoderridis* Hansf. & Deight. var *leptoderridis* Hansf. & Deight., Mycol. Paper, IMI **23**: 35. 1948.

Cols. epiphyllous, thin to dense, thinly velvety, to 6 mm. diam., rarely amphigenous. Hyphae substraight, cells mostly 20—25× 8—9 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. opposite or to 40% alternate, slightly antrorse, straight or slightly bent, 13—20 μ long; stc. cylindric, 3—6 μ long; hc. ovate to clavate-cylindric, entire, 9—15×8—11 μ. Mh. thinly scattered amongst ch., opposite or alternate, ampulliform, 15—23×8—10 μ. Ms. scattered, numerous, straight, to 330×7—9.5 μ, apex 2—4-dentate-cristate to 14 μ. P. scattered, verrucose, to 660 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—42×14—16.5 μ.

On *Leptoderris fasciculata*, Sierra Leone, Deighton 1829 (type), 2261, 737, 512, 2382; — On *Ecastophyllum brownei*, Sierra Leone, Deighton 1943; — On *Leguminosae* indet., Peru, Ule, Herb. brasil. 3274 (S); — On *Derris* sp., Congo Belge, Vanderyst B 156 (BRUX).

(629) *Meliola ostryoderridis* Hansf. & Deight., var. *millettiae-sericeae* Hansf., Reinwardtia **3**: 101. 1954.

Cols. epiphyllous, thin, to 5 mm. diam., rarely hypophyllous.

Hyphae substraight to slightly undulate, cells 20—35×6—7 μ, branching mostly opposite at wide angles, very loosely reticulate. Ch. alternate or to 20% opposite, more or less bent, 11—25 μ long, spreading; stc. cylindric, 3—8 μ long; hc. from subglobose to elongate cylindric, entire, often bent 10—18×7—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—20×8—10 μ. Ms. thinly scattered, mostly grouped around P., straight, simple and acute, or 2—4-dentate to 12 μ, up to 700×8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—42×14—17 μ.

On *Millettia sericea*, Sumatra, BO 4730, type; Java, BO 11725.

(630) *Meliola bicornis* Wint., Hedwigia **25**: 99. 1886.

The following is a re-description of the type, on ? *Desmodium* sp., San Thomé, June 1885 Moller (K, S): —

Cols. epiphyllous, closely scattered and sometimes confluent, thin, to 3 mm. diam. Hyphae undulate to sinuous, cells mostly 15—25×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or to 10% opposite, usually straight, spreading, 9—16 μ long; stc. cylindric, 2—6 μ long; hc. globose to short piriform, entire, 6—12×6—10 μ. Mh. mixed with ch., alternate or opposite, rarely ternate, ampulliform, 12—18×6—8 μ. Ms. grouped around P. and thinly scattered over mycelium, more or less straight, simple and acute, or 2-dentate to 15 μ, up to 270×7—9 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—40×12—14 μ.

From this type the following "species" and "varieties" have been described in the past as more or less divergent, but after consideration of the very large series of specimens available to me, they are here regarded as falling within the range of *M. bicornis*, and hence are now reduced to synonomy, in view of the occurrence of so many intermediate forms: —

Meliola desmodii Karst. & Roum., Rev. Mycol. **12**: 77. 1890.

Meliola lonchocarpicola Stev. var. *sancti-dominici* Cif., Ann. Mycol. **35**: 12. 1938.

Meliola bicornis Wint. var. *heterotricha* Speg., Mol. Acad. Nac. Cient. Cordoba **23**: 88. 1919.

Meliola gliricidiae Syd., Ann. Mycol. **12**: 550. 1914.

Meliola zollingeri Gaill. var. *minor* Beeli, Bull. Jard. Bot. Bruxelles **7**: 100. 1920.

Meliola desmodiicola Beeli, l. c., **7**: 94. 1920.

Meliola trinidadensis Stev. & Tehon, Mycologia **19**: 8. 1926.

Meliola meibomiae Stev. & Teh., var. *victorianae* Syd., Ann. Mycol. **28**: 58. 1930.

The colonies of the specimens I include here show variation from very thin to dense, and are epiphyllous, hypophyllous, or more rarely

on petioles or young stems. The hyphae vary from almost straight to very crooked, and to some slight extent in thickness, though more in length of the cells; branching may be close or at wide intervals, though usually at wide angles, thus giving rise to thin or close reticulation. The capitate hyphopodia vary considerably in distribution, even amongst colonies on the same leaf, and in different parts of the same colony, especially in the proportion of alternate to opposite hyphopodia, from the low values of 3—6% opposite in the type, to 50% in some collections. These hyphopodia may be straight or bent, with head cells varying from small and globose, as in the type, to rather larger globose to squat-ovate, or to more elongate shapes, oblong to piriform; in all collections included here they are almost invariably rounded and shape, and neither angulose nor lobate. The mucronate hyphopodia also vary in distribution, and especially in number; in most cellections their occurrence in close groups of three from a single parent cell is not uncommon; though this character is not limited to M. bicornis, it often serves as a useful indication. The mycelial setae vary greatly in number and distribution; in some specimens they are few and mostly grouped around the perithecia, while in others they may be so numerous as to give a velvety appearance to the colonies. In length and dentation they show great variety, from 200 μ to 800 μ long; in some specimens dentate setae predominate, while in others they are rare and then mostly grouped around the perithecia, while again in exceptional cases all the setae may be simple and acute. Spores vary little in length, but in some collections are definitely wider than in others, though every possible intermediate occurs in the range of specimens.

Previous workers have experienced much difficulty in deciding how to classify their collections belonging to this group; in some instances they have described separate varieties of *M. bicornis*, or even erected new species for their most divergent specimens; as the number of collections increases, and they are collected from a greater range of host plants, it becomes more and more doubtful whether any of such species and varieties can stand. Until such time as it becomes possible to carry out a very large series of cross-inoculation experiments, it seems best to the present author to combine all collections of this group into the single all-embracing species *M. bicornis*; the Beeli formula will then vary considerably, from 3111. to 3133. and from .3221 to .4223. Variation to any noticeable degree in any one single character is rarely accompanied by similar variation from the type in other characters, whence the difficulty of subdivision of the group.

The following is a list of specimens examined by the present writer and inculuded here: —

On *Abrus canescens*, Sierra Leone, Deighton 2072, 1562, 1464; — On *Adenanthera microsperma*, Java, BO 7370; — On *Aeschynomene* sp., Sierra Leone, Deighton 2131; — On *Bradburya pubescens*, Porto Rico, Stevens 6558; Ecuador Stevens 331; — On *Calopogonium orthocarpum*, Porto Rico, Kevorkian 49 (F); — On *Clitoria rubiginosa*, Jamaica, Hansford s. n. (K); — On *Crotalaria* sp., Uganda, Hansford 1832; — On *Dalbergia afzeliana*, Sierra Leone, Deighton 1900, Deighton in IMI 53150; — On *D. sacatilis*, Sierra Leone, Deighton 1899; — On *D. sissoo*, Gold Coast, Deighton CB 862; — On *Desmodium adscendens*, Sierra Leone, Deighton 1992, 2418; Porto Rico, Whetzel 2554, 2558 (CUP); Stevens 8551, 8579, 8648, 8681; — On *D. elegans*, Java, BO 14438, 14479; — On *D. gangeticum*, Philippines, Baker, Fung. malay. 536, PBS 39251, Stevens 1687 p. p., 1640 p. p.; Sierra Leone, Deighton 2132; Java, BO 15224, 15237; — On *D. incanum*, Brazil. Ule, Herb. brasil. 155, 293, *Puiggari* 109 (= SPEG 611, type of *M. bicornis* var. *heterotricha* Speg.); — On *D. lasiocarpum*, Sierra Leone, Deighton 1912, 1413, 825, 329, 2381, 1230, 1017, 1229; Gold Coast, Deighton CB 818, 939; Uganda, Hansford 3415; — On *D. latifolium*, Philippines, PBS 21785; Uganda, Dummer 2497; — On *D. mauritianum*, Sierra Leone, Deighton 826, 1670, 2157, 651, 1463; — On *D. pulchellum*, Philippines, PBS 23880, 34293; — On *D. scalpe*, Java, BO 12693; — On *D. supinum*, San Domingo, Ciferri 2871; Venezuela, Kern & Toro 1768, Chardon & Toro 530, 564, 449 (CUP); Porto Rico, Whetzel 2500, 2555 (CUP), Stevens 8094, 4532, 9309, 8793, 8975, 8648, 7666, 7854, 8022, 5820, 3370, 6560, 7750, p. p.; — On *D. umbellatum*, Amboina, Robinson 3974; — On *D. velutinum*, Congo Belge, Vanderyst 2086 (type of *M. desmodiicola*); Vanderyst 40058, 43699, 43705, 43746, 43747; — On *D. virgatum*, Philippines, PBS 19025, 23895; — On *D. canum*, Panama, Stevens 98, 1240; Venezuela, Sydow, Fung. venez. 391 and Fung. exot. exs. 796, with ms. simple, acute, and sp. 30—38×8—11 μ; — On *Desmodium* sp. indet., Uganda, Hansford 1764, 1955, 2814; Congo Belge, Vanderyst 210806, 43546, 43448, 29296, 43563; 29226, 2704 (type of *M. zollingeri* var. *minor*) (BRUX); Tonkin, Bon 6104, Roum., Fung. sel. exs. 5420 (type of *M. desmodii*); Philippines, PBS 11303 p. p., Stevens 795, 1601; Costa Rica, Stevens 329, 480, 605; Porto Rico, Kevorkian 165, Stevens 3941; Panama, Stevens 143, 156, 98, 191, 653, 965; Ecuador, Stevens 51; — On *Dolicholos Rhynchosia) reticulatus*, Porto Rico, Stevens 7682, 7675, 4263, 4933, 4982, 9259, 7875; — On *Dumasia villosa*, Jav, BO 17415; — On *Eriosema psoraleoides*, Congo Belge, Vanderyst 21782; — On *E. spicatum*, Sierra Leone, Deighton 1465; — On ? *Eriosema* sp., Congo Belge, Vanderyst 1604 (BRUX); — On *Erythrina cristagalli*, Sierra Leone, Deighton 1638; — On *E. senegalensis*, Sierra Leone, Deighton

1789, 926, 384, 1793, 2094; — On *E. pallida*, Sierra Leone, Deighton 2330; — On *E. tomentosa*, Uganda, Hansford 1171, 1961, 3365; Congo Belge, Hendrickx 2341; — On *E. subumbrans*, Java, BO 11893, mixed with *M. erythrinae*; — On *Erythrina* sp., Congo Belge, Vanderyst 42999, 11599, 43000, 39690, 39688, 39696, 39698 (BRUX); Ecuador, Lagerheim (F); — On *Gliricidia sepium*, Uganda, Hansford 1811, 986; Gold Coast, Deighton CB 1027, Hughes in IMI 48003; Sierra Leone, Deighton 383, 2350, 1412; Philippines, PBS 21929 (type of *M. gliricidiae*); Honduras, Standley 54398 (F); — On *Glycine javanica*, Uganda, Dummer 918, 4270, Small 123; — On *Indigofera heudelotti*, Sierra Leone, Deighton 2403; — On *I. macrophylla*, Sierra Leone, Deighton 1830; — On *Lonchocarpus cyanescens*, Sierra Leone, Deighton 548; — On *L. domingensis*, San Domingo, Ciferri, Mycofl. doming. exs. 275, = Ciferri 2756, type of *M. lonchocarpicola* var. *sancti-dominici*; — On *L. glaucifolius*, Porto Rico, Stevens 7264; — On *L. sericeus*, Gold Coast, Deighton CB 753, 736, Hughes in IMI 37669; — On *Lonchocarpus* sp., Honduras, Standley 53686 (F); Venezuela, Chardon & Stelling 813 (CUP); Gold Coast, Hughes in IMI 61444; — On *Meibomia (Desmodium) axillaris*, Porto Rico, Stevens 76453, 8179, 7395, 7791; — On *Millettia pallens*, Sierra Leone, Deighton 1901, 2187, 1291; — On *M. stapfiana*, Sierra Leone, Deighton 989, 1685; Gold Coast, Hughes in IMI 37666, 37668, 38096, 37672; — On *Millettia* sp., Congo Belge, Hendrickx 2384l Gold Coast, Hughes in IMI 37667, 61441, 48122, 37651, 37665, 48124; — On *Psophocarpus palmettorum*, Sierra Leone, Deighton 2178, 2142, 1836, 1491; — On *P. palustris*, Cameroun, Jacques-Felix 4675 (P); — On *Rhynchosia calycina*, Sierra Leone, Deighton 1593, 2236; — On *R. cyanosperma*, Uganda, Hansford 3534; — On *Tephrosia* sp., Uganda, Hansford 1264, 2038; Surinam, ? Schweinitz in K, Congo Belge, Staner 668 (BRUX); — On *Papilionaceae* indet., Brazil, Ule in Rab.-Wint.-Pazschke, Fung. europ. 3545; Costa Rica, Stevens 354; Congo Belge, Vanderyst 30847. (BRUX); — On *Meibomia* sp., Trinidad, Stevens 825, (type of *M. trinidadensis*); — On *Galactia* sp., Jamaica, Thaxter 7234 (F).

(631) *Meliola desmodii* Karst. & Roum. var. *heterochaeta* Cif., Mycopathologia **7**: 121. 1954.

Differs from type: Ms. usually simple and obtuse, rarely acute or more or less centiculate, very rarely incided-dentate; spres 30—35 × 10—12 μ.

On *Desmodium supinum*, San Domingo, Ekman 2800, type.

No specimens have become available to the present author, who, from the meagre description given by Ciferri, is unable to place it in his arrangement.

(632) *Meliola meibomiae* Stev. & Tehon, Mycologia **18**: 7. 1926.

Cols. amphigenous, mostly epiphyllous, small, often confluent, thin. Hyphae flexuous to tortuous, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 10—15×5—7 μ. Ch. alternate, or to 15% opposite in some colonies, spreading or antrorse, straight or bent, 11—16 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose to ovate, often slightly bent, entire, 8—11×7—9 μ. Mh. mixed with ch., alternate, opposite or sometimes ternate, ampulliform, 14—16×6—8 μ. Ms. scattered, straight or slightly bent, simple, obtuse to acute, to 390×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 32—38×10—12 μ.

On *Meibomia* sp., British Guiana, Stevens 434 (type), 650, 257 (FLS, F). — On *Desmodium frutescens*, Trinidad, Baker in ICTA 1070 (IMI).

(633) *Meliola pterocarpicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 37. 1948.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 8 mm. diam. or confluent. Hyphae substraight, cells mostly 20—25×6—7.5 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, very rarely alternate save at the base of a branch, spreading, straight, 11—15 μ long; stc. cylindric, 2—4 μ long; hc. globose to widely piriform, entire, 8—12×9—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 17—22×7—10 μ. Ms. numerous, scattered, straight, to 340×7—8.5 μ, apex 2—3-dentate to 10 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse 4-sptate, constricted, 37—47×13—17 μ.

On *Pterocarpus santalinoides*, Sierra Leone, Deighton 1914 (type), 374, 2380, 1232, 983, 1231, 982.

(634) *Meliola constipata* Spe., Anal. Mus. Nac. Buenos Aires, **32**: 370. 1924.

= *Meliola bicornis* Wint. var. *constipata* Speg., Anal. Soc. Cient. Argentina **26**: 20, no. 57. 1888.

Cols. epiphyllous, 1—2 mm. diam. or confluent, dense, subvelvety. Hyphae substraight, cells mostly 15—20×6—8 μ, branching close, opposite at varying angles, densely reticulate. Ch. alternate or opposite in varied proportions, straight or antrorsebent, 11—19 μ long; stc. cuneate or cylindric, 3—6 μ long; hc. subglobose to widely ovate or piriform, entire, 9—14×7—10 μ. Mh. few, scattered amongst ch., opposite or alternate, ampulliform, 13—17×7—10 μ. Ms. mostly grouped around P., straight, simple and obtuse (? immature) or 2-dentate, to 250×7—9 μ. P. in close central group, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—44×13—15 μ.

On *Leguminosae* indet., Paraguay, Balansa 4022, type (SPEG,, K); — On *Collaea virgata*, Brazil, Rick, Fung. austr.-amer. 198, 265,

Theissen, Decad. fung. brasil. 154; — On *Desmodium cuneata*, Argentina, Rodriguez in SPEG 1826-bis.

(635) *Meliola platysepali* Hansf. & Deight., Mycol. Paper, IMI **23**: 33. 1948.

Cols. epiphyllous, very thin, to 4 mm. diam. Hyphae substraight, cells mostly 20—35×5—6 μ, branching opposite at wide angles, very loosely reticulate. Ch. alternate or very rarely (less than 1%) opposite, at wide angles, 12—18 μ long, straight; stc. cylindric, 2—4 μ long; hc. clavate to oblong, entire, 9—11×6—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—23×7—9 μ. Ms. loosely scattered, or mostly grouped around P., to 260×7—9 μ, rarely simple and acute, mostly 2—3-dentate to 15 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—40×11.5—14 μ.

On *Platysepalum* sp., Sierra Leone, Deighton 2116, type; Gold. Coast, Hughes in IMI 29533.

(635) *Melioïa baphiae-polygalaceae* Hansf. & Deight., Mycol. Paper, IMI **23**: 34. 1948.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae substraight, cells mostly 20—30×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or to 5% opposite, spreading, straight or slightly bent, 14—20 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to oblong or clavate, 10—13×9—13 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 14—20×7—10 μ. Ms. scattered, straight, simple and subacute, or 2—3-dentate to 10 μ, up to 400×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 37—44×15—18 μ.

On *Baphia polygalacea*, Sierra Leone, Deighton 1851, 1733.

(637) *Meliola carvalhoi* Deighton, Sydowia **5**: 4. 1951.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight, cells mostly 17—32×5—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or to 20% opposite, antrorse or spreading, 13—20 μ long; stc. cylindric, 3—7 μ long; hc. ellipsoid to subglobose or piriform, often slightly bent, entire, 9—14×9—14 μ. Mh. few, separate or mixed with ch., opposite or alternate, ampulliform, 17—26×6—9 μ. neck elongate, narrow. Ms. numerous, straight, scattered, to 630×9—10 μ, apex simple and acute, or dentate to 3 μ. P. scattered, verrucose, to 280 μ diam. Sp. ellipsoid to subcylindric, obtuse, 4-septate, slightly constricted, 48—56×10—22 μ.

On *Lonchocarpus cyanescens*, Portuguese East Africa, Carvalho in IMI 16646, type.

(638) *Meliola millettiae-sanaganae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 35. 1948.

Cols. thin, epiphyllous, to 4 mm. diam., or numerous and confluent. Hyphae substraight, cells mostly 25—30×6 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. opposite or alternate (—15%), antrorse or spreading, usually straight, 12—19 μ long; stc. cylindric, 2—6 μ long; hc. oblong to slightly piriform, entire, 8—13×7—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, straight or bent. Ms. scattered, to 370×8—9 μ, simple and acute, or very rarely 2-dentate to 3 μ, straight. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×12 14 μ.

On *Millettia sanagana*, Sierra Leone, Deighton 2125, type; — On *M. stapfiana*, Gold Coast, Hughes in IMI 37814; — On *M.* sp., Congo Belge, Vanderyst s. n. (BRUX); — On *M. reticulata*, Formosa, Yamamoto (USDA).

(639) *Meliola millettiae-rhodanthae* Hansf. & Deight., Mycol. Paper, IMI **23**: 35. 1948.

Cols. epiphyllous, to 10 mm. diam., or confluent, thin, subvelvety. Hyphae substraight to slightly undulate, cells mostly 25—30×6 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite or alternate (—50%), at wide angles, straight or slightly bent, 13—22 μ long; stc. cylindric, 3—8 μ long; hc. clavate to oblong, entire, 9—14× 6—9 μ. Mh. few, scattered amongst ch., opposite or alternate, ampulliform, neck elongate and narrow. Ms. scattered, straight, simple, subacute, to 280×6.5—8 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 36—42×14—16.5 μ.

On *Millettia rhodantha*, Sierra Leone, Deighton 440,type, 2912, 3725.

(640) *Meliola millettiae-chrysophyllae* Deighton, Sydowia **7**: 7. 1951.

= *Meliola bicornis* Wint. var. *millettiae* Beeli, Bull. Jars. Bot. Bruxelles **7**: 94. 1920.

Cols. epiphyllous, thin, to 10 mm. diam., or numerous and confluent. Hyphae substraight, cells mostly 20—30×5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or to 20% opposite, straight or bent, spreading, 12—18 μ long; stc. cylindric, 2—5 μ long; hc. oblong to clavate, entire, straight or bent, 10—16× 6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—24×8—9 μ, neck narrow, elongate. Ms. scattered, straight, mostly simple and acute, some 2—3-dentate to 6 μ, to 530×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—38×13—14×10 μ.

On *Millettia chrysophylla*, Sierra Leone, Deighton 1765, type; — On *Millettia* sp., Congo Belge, Vanderyst s. n., type of *M. bicornis* var. *millettiae* (BRUX).

(641) *Melioïa baphiae-nitidae* Hansf. & Deight. var. *breviseta* Deight., Sydowia **5**: 3. 1951.

Cols. hypophyllous, subdense, slightly velvety, to 3 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 20—30× 6—8 μ, branching opposite at wide angles, densely reticulate. Ch. alter-alternate or 5—10% opposite, antrorse or spreading, 15—22 μ long; stc. cylindric, 4—7 μ long; hc. subglobose to ovate, often slightly bent, entire, 10—15×7—9 μ. Mh. scattered amongst ch., opposite or alternate, ampulliform, 19—22×7—9 μ. Ms. scattered and grouped around P., numerous, straight or slightly bent, simple and acute, or rarely subdentate, to 400×7—9 μ. P. scattered, verrucose, to 225 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 36—44×14—17×10—11 μ.

On *Baphia racemosa*, South Africa, Van der Bijl in IMI 15507, type.

(642) *Meliola dalbergiae* Hansf. Sydowia **11**: 55. 1958.

Cols. hyphophyllous, dense, subvelvety, to 2 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, at wide angles, closely reticulate and almost solid, cells mostly 20—25×7—9 μ. Ch. alternate or opposite, spreading, usually bent, 20—29 μ long; stc. cylindric, 3—10 μ long; hc. versiform, irregularly angulose to sub-lobate, often bent, 15—22×9—15 μ. Mh. separate, opposite or aternate, ampulliform, 20—25×8 11 μ, neck elongate. Ms. scattered and grouped around P., straight, simple, obtuse, subacute or sometimes minutely dentate (2— μ), up to 330×9—10 μ. P. in close central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—43×15—17 μ.

On *Dalbergia monetaria*, Porto Rico, Stevens 7476 type, 7577, 9016 p. p., 36158 p. p. (FLS).

(643) *Meliola zollingeri* Gaill., Le Genre *Meliola*, 1892, p. 105.

Cols. epiphyllous, rather thin, to 3 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—25×6—7 μ, branching opposite at wide angles, loosely to rather closely interwoven-reticulate. Ch. alternate or less than 1% opposite, antrorse or spreading, often reflexed above, 14—19 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. subglobose, ovate or piriform, sometimes bent, entire, 9—14× 8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—22×7—8 μ. Ms. thinly scattered and groped around P., straight, simple and acute, or 2—3-dentate to 15 μ, up to 480×7—9 μ (Gaillard — to 600 μ long). P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 36—42×13—14 μ.

On *Desmodium* sp., Java, Zollinger 70, type (P); Amboina, Robinson 2256, 2180, (S, F).

(644) **Meliola galactiae** (Stev.) Hansf., comb. n.

= *Meliola bicornis* var. *galactiae* Stev., Illinois Biol. Monogr. **2**: 65. 1916.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae substraight to sinuous or flexuous, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, densely reticulate and sometimes almost solid. Ch. alternate or about 1% opposite, straight or bent, more or less antrorse, 15—20 μ long; stc. cylindric or cuneate, 3—13 μ long; hc. rarely subglobose to piriform and entire, usually irregularly rounded-angulose to sublobate, straight or bent, 11—20× 9—15 μ. Mh. separate, or mixed with a few ch., usually opposite, ampulliform, 15—20×6—9 μ. Ms. numerous, scattered, straight, simple and acute or 2—3-dentate (—6 μ), to 310×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—45×14—18 μ.

On *Galactia dubia*, Porto Rico, Stevens 7857, type (FLS, PRET); On *Calopogonium galactioides*, Costa Rica, Sydow, Fung. exot. exs. 615.

(645) *Meliola physostigmatis* Hansf. & Deight., Mycol. Paper, IMI **23**: 33. 1948.

Cols. epiphyllous, very thin, to 3 mm. diam. Hyphae substraight, cells mostly 25—35×7 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate, less than 1% opposite, more or less bent, spreading, 15—20 μ long; stc. cylindric to cuneate, 5—7 μ long; hc. clavate, entire or sometimes truncate at apex, often bent, 10—15× 8—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×8—10 μ. Ms. loosely scattered, straight, simple and acute, or 2—4-dentate to 10 μ, to 480×7.5 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—47×16—18 μ.

On *Physostigma venenosum*, Sierra Leone, Deighton 2113, type.

(646) *Meliola denticulata* Wint. in Gaill., Le Genre *Meliola*, 1892, p. 98.

Cols. amphigenous, to 1 mm. diam., or numerous and confluent over leaf, subdense, thinly velvety. Hyphae slightly undulate, cells mostly 30—40×6—7 μ, branching opposite at acute angles, becoming closely reticulate in older colonies. Ch. alternate, antrorse, straight or bent, 20—38 μ long; stc. cylindric, 5—22 μ long; hc. globose to wide piriform, rarely somewhat rounded-angulose, 12—18×10—14 μ. Mh. separate, opposite, alternate or sometimes ternate, ampulliform, 13—22×8—9 μ. Ms. thinly scattered and grouped around P., straight, simple and acute, or crenulate-torulose near apex, or sometimes shortly denticulate (—4 μ), to 360×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×14—16 μ.

On *Centrosema virginiana*, Brazil, Ule, Herb. brasil. 379, type (S ex Sydow).

(647) *Meliola ormocarpi* Hansf. & Deight., Mycol. Paper, IMI **23**: 30. 1948.

Cols. epiphyllous, to 3 mm. diam., or numerous and confluent, thin to very dense. Hyphae substraight to undulate, cells mostly 15—20 × 6—8 μ, branching opposite at wide angles, loosely to densely reticulate, sometimes almost solid. Ch. alternate, or to 1% opposite, spreading, straight or slightly bent, 13—18 μ long; stc. cylindric, 2—6 μ long; hc. clavate to subglobose, straight or bent, entire, 8—13 × 8—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform to conoid. Ms. few, or none in some colonies, scattered, straight, to 180 × 7—8 μ, simple and acute, or rarely 2-dentate to 10 μ. P. scattered, verrucose, to 195 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—44½14—16 μ.

On *Ormocarpum verrucosum*, Sierra Leone, Deighton 698 (type), 1880, 2096; San Thomé, Moller, June 1885 (S).

(648) *Meliola vignae-gracilis* Hansf. & Deight., var. *panamensis* Hansf., Sydowia **9**: 78. 1955.

(31⅓1.4221)

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 15—30 × 7—8 μ, branching opposite at wide angles, becoming densely reticulate. Ch. alternate (much less than 1% opposite), straight or bent, antrorse or spreading, 15—21 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. globose to widely ovate, often bent, entire, 11—16 × 11—13 μ. Mh. separate, on hyphae often extending beyond colony margin; many colonies with none; opposite or alternate, ampulliform, 15—19 × 7—9 μ. Ms. thinly scattered, substraight, simple and obtuse, or sometimes 2-furcate to 20 μ, the tips obtuse and bent, often tortulose, to 280 × 8 μ. P. scattered, globose, verrucose, to 170 μ diam. Sp. oblong, to subellipsoid, obtuse, 4-septate, constricted, 36—42 × 13—14 μ.

On *Desmodium* sp., Panama, Stevens 152 (type), 370, 85, 869, 191; — On *Wenderothia kasiocalyx*, Ecuador, Stevens 339; — On *Meibomia axillaris*, Porto Rico, Stevens 7838; — On *Papilionaceae* indet., Venezuela, Chardon & Stelling 844 (F).

(649) *Meliola mucunae-acuminatae* Hansf., Reinwardtia **3**: 100. 1954.

Cols. epiphyllous, to 1 mm. diam., numerous and confluent over the leaf, thin. Hyphae substraight to undulate or sinuous, cells mostly 30—40 × 6 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate only, straight or bent, spreading, 13—18 μ long, sometimes thinly scattered; stc. cylindric, 3—6 μ long; hc. usually subglobose and bluntly rounded-angulose, sometimes bent to irregular, clavate or truncate at apex, 10—15 × 9—16 μ. Mh. numerous, separate, opposite or alternate, sometimes ternate, ampulliform, 10—16 × 6—8 μ. Ms. thinly scattered and grouped around P., straight,

rarely simple and acute, mostly 2—3-dentate to 20 μ; to 290×7—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×12—15×10—12 μ.

On *Mucuna acuminata*, Java, BO 12091, type.

(650) *Meliola diphysae* Stev., Ann. Mycol. Berlin **26**-195. 1928.

Cols. epiphyllous, to 4 mm. diam., dense, velvety. Hyphae tortuous, branching opposite at wide angles, becoming densely interwoven-reticulate, cells mostly 12—20×5—6 μ. Ch. alternate or to 5% opposite, straight or bent, spreading or antrorse, 11—16 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to ovate or oblong, entire, 8—12×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×7 μ. Ms. numerous, scattered and grouped around P., straight, apex translucent, irregularly 2—4-dentate to 15 μ, up to 180×6—7 μ. P. scattered, verrucose, to 140 μ diam./Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 34—40×11—13 μ.

On *Diphysa robinioides*, Panama, Stevens 1124, type (FLS, F).

(651) *Meliola lonchocarpicola* Stev., Ann. Mycol. Berlin **26**: 207. 1928.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae straight, cells mostly 20—30×5—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 20—27 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. versiform, straight or variously bent, irregularly rounded-angulose to sublobate, 14—19×10—15 μ. Mh. separate, opposite or alternate, ampulliform, 14—19×6—8 μ. Ms. scattered, straight, to 400×8—9 μ, apex irregularly dentate with several small teeth to 5 μ long, or 2-furcate to 15 μ, or less commonly simple and obtuse. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—42×14—17 μ.

On *Lonchocarpus* sp., Panama, Stevens 1180, 1172, 721; — On *Dalbergia* sp., Porto Rico, Stevens 8197.

(652) *Meliola teramni* Syd., Ann. Mycol. **15**: 193. 1917.

= *Meliola nigro-rufescens* Sacc. var. *teramni* Sacc., Atti Acad. Ven.-Trent.-Istr., **10**: 60. 1917.

= *Meliola teramniae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 369. 1918.

Cols. amphigenous, mostly epiphyllous, 1—4 mm. diam., ofteg numerous and confluent, rather dense, thinly velvety. Hyphae substraight to slightly undulate, cells mostly 20 30×6—8 μ, branching usually opposite at wide angles, closely interwoven-reticulate. Ch. alternate or to 5% opposite, straight or variously bent, 12—19 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to wide ovate or widely clavate, entire, bent or sometimes transverse, 9—14×9—12 μ. Mh. mixed with ch., usually opposite, ampulliform, 15—20×7—10 μ, neck elongate. Ms. scattered, straight, simple and acute, to 1000×8—10 μ; others grouped around P., and 2—4-dentate or shortly

2-furcate, not usually exceeding 350 μ long. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×13—16 μ.

On *Teramnus uncinatus*, Philippines, Baker, Fung. malay. 553, type. 364 (type of *M. nigrorufescens* var. *teramni*), PBS 2846, 1657; San Domingo, Ciferri ,Mycofl. doming. exs. 151-bis; Porto Rico, Heller 6259. Stevens 3583. 6554. 3537. 3136, 3503, 228; — On *T. labialis*, Philippines. PBS 25344 (type of *M. teramniae*); Uganda, Dummer 2869 (K); — On *Calopogonium mucunoides*, Sierra Leone, Deighton 3894. 3891. 3828; — On *Canacalia ensiformis*, cult., Sierra Leone, Deighton 1831; — On *Derris trifoliata*, British North Borneo, Elmer 20611 (BO); — On *Desmodium* sp. Philippines, Stevens 1650; — On *Erythrina senegalensis*, Gold Coast, Deighton CB 955: Hughes in IMI 44198; — On *Erythrina* sp., Gold Coast, Deighton CB 876; Congo Belge, Vanderyst 29337, 29537; — On *Millettia thonnigii*, Gold. Coast, Deighton CB 824; — On *Pongamia pinnata*, Malaya, Johnston 1120 (IMI)-; — On *Leguminosae* indet., Congo Belge, Vanderyst 39454, 33277; Uganda, Hansford 1420.

(653) *Meliola buteae* Hafiz, Azmatullah & Kafi, Biologia **1**: 112. 1955.

Cols. mostly epiphyllous, to 4 mm. diam., dense, velvety, numerous and confluent. Hyphae substraight to slightly undulate, cells mostly 20—35×5—7 μ, branching opposite or irregular at wide angles, becoming densely interwoven-reticulate. Ch. alternate or about 3% opposite, antrorse or spreading, 14—20 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to bent ovate, entire, 11—15×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—23×7—9 μ, neck elongate. Ms. closely scattered, and grouped around P., straight, simple, acute, to 750×9—11 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—48×16—10×14—16 μ.

On *Butea frondosa*, East Pakistan, A. Khan in IMI 58127, type.

(654) *Meliola pictetiae* Hansf., Sydowia **9**: 32. 1955.

Cols. amphigenous, to 3 mm. diam., subdense, thinly velvety. Hyphae substraight, cells mostly 15—25×6—7 μ, branching opposite, acute, loosely to closely reticulate. Ch. about 50% opposite, subantrorse, usually straight, 15—19 μ long; stc. cylindric, 3—6 μ long; hc. subglobose, ovate or piriform, entire, 10—14×8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×8—11 μ. Ms. thinly scattered, and grouped around P., straight or slightly flexuous, simple, acute, to 600×9—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 36—43×17—19×13—15 μ.

On *Pictetia spinifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 188, type.

(655) *Meliola franciscana* Hansf., Proc. Linn. Soc. London, **160**: 123. 1948.

Cols. epiphyllous, rather dense, to 2 mm. diam. Hyphae straight or slightly undulate, cells 20—30×6—8 μ, branching opposite, acute, closely reticulate and in parts almost solid. Ch. opposite, or alternate where crowded, usually straight, spreading, 12—15 μ long; stc. cylindric, 2—5 μ long; hc. globose to piriform, entire, 9—12 μ diam. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—17× 8—9 μ. Ms. thinly scattered, and grouped around P., straight, simple, acute, to 400×6—8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, slightly constricted, 36—41×13—17 μ.

On *Leguminosae* indet., Brazil, Ule in Rabh. Fung. europ. 3248, type (S); — On ? *Lonchocarpus* sp., Brazil, Ule, Herb. brasil. 1139 (S, K); — On *Coumarouna odorata*, Orinoco, Rusby 432 (BM)- — On *Ormosia* sp., Philippines, PBS 35909, 35899 (FLS).

(656) *Meliola abrupta* Syd., Ann. Mycol. **15**: 181. 1917.

= *Meliola derridis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 368. 1918.

Cols. amphigenous, thin, arachnoid, minute or confluent, thinly velvety, to 10 mm. diam. Hyphae substraight, cells mostly 20—40× 5—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate or to 30% opposite, straight or slightly reflexed-bent, antrorse or spreading, 13—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovate, subglobose or piriform, straight or bent, entire, 9—15×7— 11 μ. Mh. numerous, mixed with ch., opposite or alternate, conoid to ampulliform, 15—24×8—9 μ, neck narrow, elongate. Ms. fairly numerous, scattered, straight, simple, acute, or rarely 2—3-dentate to 10 μ, to 450×7—10 μ. P. scattered or in loose central group, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—42×13—15×10—12 μ.

On *Derris* sp., Philippines, PBS 24068, type; PBS 27788, type of M. *derridis*; PBS 24403; — On *D. diadelpha*, Philippines, PBS 23904, 23912; — On *D. multiflora*, Java, BO 10971, with setae to 600 μ; — On *D. heptaphylla*, Philippines, PBS 34307 (FLS).

(657) *Meliola carbonacea* Cif., Ann. Mycol. 36: 207. 1938.

Cols. epiphyllous and on petioles, dense, sometimes velvety, to 5 mm. diam., usually numerous and confluent. Hyphae substraight, cells mostly 15—25×7—8 μ, branching opposite, close, at wide angles, densely reticulate and in places nearly solid. Ch. alternate or to 20⅓ opposite, subantrorse, usually straight, 13—25 μ long; stc. cylindric, 3—8 μ long; hc. subglobose to piriform or cylindric, usually straight, entire, 9—17×8—11 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 16—20×8—11 μ. Ms. few to numerous, scattered and grouped around P., straight, simple, acute, to 400×8—10 μ.

P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—42×14—15×11—13 μ.

On *Sophora tomentosa*, San Domingo, Ciferri, Mycofl. doming. exs. 242, type; — On *Brya ebenus*, Jamaica, Martyn in IMI 19663-a, with cols. hypophyllous and hyphae slightly undulate.

(658) *Meliola indigoferae* Syd., Bothalia 2: 451. 1928.

Cols. mostly hyphophyllous, to 4 mm. diam. or confluent, subdense, thinly velvety. Hyphae sinuous, cells mostly 15—25×5—8 μ, branching opposite at wide angles, becoming closely reticulate. Ch. opposite or alternate in varying proportions, 14—16 μ long, antrorse or spreading, straight or bent; stc. cylindric, 4—6 μ long; hc. ovoid to piriform, entire, straight or bent, 10—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—15×6—9 μ. Ms. fairly numerous, scattered, and grouped around P., substraight, simple, acute, to 300×7—10 μ. P. in small central group, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—38×12—15 μ, rarely to 42 μ long.

On *Indigofera natalensis*, South Africa, PRET 9703, 11560, 10144; — On *I.* sp., Cameroons, Jacques-Felix 4825 (P).

(659) *Meliola kawandensis* Hansf., Sydowia 10: 77. 1957.

Cols. caulicolous, very dense, subcrustose, to 3 mm. diam., often sunken and strongly parasitic. Hyphae substraight, cells mostly 10—20×7—8 μ, branching opposite at wide angles, close, becoming densely reticulate and almost solid. Ch. opposite or alternate, very closely crowded, straight, spreading, 11—15 μ long; stc. cylindric, 1—4 μ long; hc. globose, entire, 9—12 μ diam. Mh. mostly separate, opposite, ampulliform. Ms. numerous, closely scattered, straight, simple, acute, to 200×9—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 36—41×11—13 μ.

On *Desmodium salicifolium*, Uganda, Hansford 2547 (type), 2706; Congo Belge, Hendrickx 1786; — On *D.* sp., Gold Coast, Hughes in IMI 47513, on leaves and stems; — On *Meibomia supinum*, Venezuela, Toro 13, on leaves (CUP); — On *Uraria picta*, Sierra Leone, Deighton in IMI 48958.

(660) *Meliola baphiae-nitidae* Hansf. & Deight., Mycol. Paper, IMI 23: 33. 1948.

Cols. amphigenous, subdense, thinly velvety, to 5 mm. diam. Hyphae substraight, cells mostly 20—40×6—8.5 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or alternate (to 50%), spreading, straight or slightly bent, 13—19 μ long; stc. cylindric or cuneate, 3—5 μ long; hc. subglobose, ovate or piriform, straight or bent, entire, 9—14×9—12 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, ampulliform, 15—20×6—9. Ms. scattered, straight, simple, acute, to 700×7—8.5 μ. P. scattered, verucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×13—16 μ.

On *Baphia nitida*, Sierra Leone, Deighton 2233; Gold Coast, Deighton CB 925, type, Hughes in IMI 37168, 37169, 37160, 37174, 37163, 37170, 37171, 37162, 37172.

(661) *Meliola nyanzae* Hansf., Journ. Linn. Soc. London **51**: 543. 1938.

Cols. epiphyllous and caulicolous, strongly parasitic and causing defoliation, dense, velvety, to 6 mm. diam. Hyphae straight to crooked, cells 23—30×6—9 μ, branching opposite or irregular, acute, densely reticulate and becoming solid. Ch. alternate or opposite, antrorse or sometimes reflexed, 15—20 μ long; stc. cylindric, often bent, 4—8 μ long; hc. subglobose to piriform, entire, 10—16×10—15 μ. Mh. separate, opposite or alternate, ampulliform, neck elongate. Ms. numerous, straight, to 330×6—10 μ, acute or acuminate, simple. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 31—37×10—13 μ.

On *Indigofera* sp., Uganda, Hansford 2312, type.

(662) **Meliola erythrinae-micropterycis** Hansf., nom. n.

= *Meliola bicornis* Wint. var. *erythrinae* Cif., Ann. Mycol. **31**: 146. 1933.

Cols. epiphyllous, thin, thinly setose, to 5 mm. diam. or confluent. Hyphae undulate to crooked, cells mostly 20—30×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate in some parts, up to 50% opposite in others of the same colony, subantrorse, straight or variously bent, 10—15 μ long; stc. cylindric, 2—5 μ long; hc. globose, piriform or bent ovate, entire, 8—11×7—10 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 12—18×5—8 μ. Ms. thinly scattered, straight in lower part, simple, obtuse, the upper part irregularly torulose and often bent to tortuous near the apex, not uncinate or hamate, to 280×6—8 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, sonstricted, 31—37×11—14 μ.

On *Erythrina micropteryx*, San Domingo, Ciferri, Mycofl. doming. exs. 152, type; Porto Rico, Stevens 9166 (FLS).

The setae were originally described as dentate, but in neither of the specimens quoted was I able to find any such.

(663) *Meliola andirae* Earle, Bull. New York Bot. Gard. **3**: 303. 1905.

Cols. mostly epiphyllous, thin to subdense, thinly velvety, usually numerous and confluent over the leaf, when single to 3 mm. diam. Hyphae substraight, cells mostly 15—20×6—8 μ, branching opposite at wide angles, closely reticulate to nearly solid in centre. Ch. opposite save where crowded (alternate about 10%), straight, subantrorse, 12—15 μ long; stc. cylindric, 2—5 μ long; hc. globose to widely prirform, entire, 8—12×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×6—9 μ. Ms. fairly numerous, scattered, straight,

simple, subacute, to 500×8—10 μ. P. scattered, slightly verrucose, ro 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×15—17 μ.

On *Andira jamaicensis*, Porto Rico, Heller 6448 (type), Stevens 4917, 7800, 6566, 9294, 3132, 3247, 3137, 1078, 8901, 6613, 204, 766, 4180, 5269, 6612, 3791, Whetzel 588, Chardon 884, 859; San Domingo, Ciferri 2252, Ciferri, Mycofl. doming. exs. 262; — On *A. inermis*, Trinidad, Thaxter 7480 (F); Jamaica, Thaxter 7342, 8694 (F); Porto Rico, Fink 1875 (F), Stevens 9481; Panama, Stevens 1230, 816, 359, 745, 868, 149; — On *Brya ebenus*, Jamaica, Thaxter 7351, 7353 (F).

Some specimens show the ms. flexuous to rarely almost uncinate; there is considerable variation in size of hc., and the mh. are sometimes 3 or even 4 to a single parent cell.

Arnaud in Les Asterinees, Thesis, Paris, p. 229, 1918, described *Meliola andirae* var. *puttemansii* on *Andira* sp. from Brazil, originally determined by Hennings as *Dimerosporium meliolicola*, Hedwigia 42: 107, 1903. No authentic specimen has become available to the present writer.

(664) *Meliola inocarpi* Stev., Ann. Mycol. 26: 232. 1928.

Cols. amphigenous, rather dense, 2—8 mm. diam., often numerous and widely confluent. Hyphae substraight, cells mostly 25—30× 7—8 μ, branching opposite at wide angles, in centre becoming densely reticulate .Ch. opposite, slightly antrorse or spreading, straight or slightly bent, 15—20 μ long; stc.cylindric, 2—5 μ long; hc. cylindric with rounded apex, entire, straight or slightly bent, 12—18×7—10 μ. Mh. mixed with ch., fairly numerous, opposite, ampulliform, 16—23× 8—10 μ, neck elongate. Ms. few, scattered, straight, simple, acute, to 920×9—11 μ, those around P. much shorter. P. scattered, verrucose, to 190 μ diam. Sp. broadly ellipsoid, obtuse, 4-septate, deeply constricted, 40—48×19—22 μ.

On *Inocarpus* sp., Singapore, Baker, Fung. malay 459, type.

(665) *Meliola rudolphiae* Stev., Illinois Biol. Monogr. 2: 43. 1916.

Cols. epiphyllous, to 1 mm. diam., subdense, often numerous and confluent. Hyphae substraight to crooked, cells mostly 25—35× 8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading, 20—38 μ long, straight or bent; stc. cuneate or cylindric, 4—7 μ long; hc. clavate and entire, or irregularly rounded-angulose to sublobate, often bent, 15—21×10—17 μ. Mh. separate, alternate or opposite, ampulliform, 14—18×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 400×7—9 μ. P. in central group, slightly verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—52×17—20 μ.

On *Rudolphia volubilis*, Porto Rico, Stevens 4791 (type), 4835, 4486, 5439, 8437, 8698, Whetzel 3314; — On *Galactia pendula*, Jamaica, Dennis s. n. (K).

(666) *Meliola tungurahuana* Syd., Ann. Mycol. **37**: 333. 1939.

Cols. epiphyllous, rather dense, to 2 mm. diam., sometimes confluent. Hyphae substraight, cells mostly 20—30 × 7—8 μ, branching opposite, acute, closely reticulate. Ch. alternate, more or less antrorse, mostly straight, 22—33 μ long; ste. cuneate to cylindric, 4—12 μ long; hc. clavate, rounded, or usually 3—4-angulose above, 15—21 × 12—15 μ. Mh. few, separate, alternate, opposite or ternate, ampulliform, 15—24 × 7—10 μ. Ms. scattered, and grouped around P., straight, simple, obtuse, to 450 × 7—9 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—51 × 16—18 μ.

On *Erythrina* sp., Ecuador, Sydow, Fung. aequator. 452, type.

(667) *Meliola euchrestiae* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 226. 1941.

Cols. hypophyllous, velvety, to 10 mm. diam., sometimes widely confluent. Hyphae strongly undulate, cells 18—44 × 6—7 μ, branching opposite, loosely reticulate. Ch. alternate or scattered, clavate, more or less bent; ste. 5—9 μ long; hc. subglobose to ellipsoid, 9—14 × 8—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—28 × 8—9 μ, neck elongate. Ms. numerous, simple, obtuse, straight or slightly bent, to 810 × 10—12 μ. P. in central group, verrucose, to 210 μ diam. Sp. oblong, ends obtuse to conoid, 4-septate, often slightly bent, slightly or not constricted, 39—48 × 12—17 μ.

On *Euchrestia horsfieldii*, Formosa, Yamamoto, type (not seen by the present author).

(668) *Meliola hendrickxiana* Hansf., Proc. Linn. Soc. London, **159**: 25. 1947.

Cols. amphigenous, mostly epiphyllous, subdense, to 7 mm. diam., or confluent, thinly to closely velvety. Hyphae undulate to crooked, cells mostly 30—40 × 6—8 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate only, more or less bent, 20—34 μ long; ste. cuneate or cylindric, more or less bent, 6—17 μ long; hc. narrow ovate or mostly irregularly angulose to sub-2—3-lobate, versiform, often sharply bent, 13—20 × 9—15 μ. Mh. separate, opposite, alternate or ternate, ampulliform, 13—18 × 7—9 μ. Ms. numerous, scattered and grouped around P., simple, acute to subacute, to 440 × 7—9 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 37—44 × 13—15 μ.

On ? *Vigna* sp., Congo Belge, Hendrickx 3007, type, 3491.

(669) *Meliola erythrinae* Syd., Ann. Mycol. 15: 185. 1917.

Cols. epiphyllous, thin, 2—3 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 30—35 × 5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, subantrorse, usually straight, 15—23 μ long; ste. cuneate, to cylindric, 4—11 μ long; hc. cylindric to clavate or subglobose, entire or some-

what rounded-angulose. 12—16 × 10—16 μ. Mh. scattered, opposite or alternate, ampulliform, 13—19 × 7—9 μ. Ms. few, scattered, straight or slightly bent, simple, obtuse, to 500 × 9—10 μ. P. scattered or loosely gregarious, verrucose, to 160 μ diam., surface cells papillate to obtusely conoid, to 30 μ high, distinct from all other species on Leguminosae. Sp. cylindric, obtuse, 4-septate, slightly constricted, 35—42 × 11—15 μ.

On *Erythrina indica*, Philippines, PBS 24052, type; — On *E. subumbrans*, Java, BO 11893 p. p.; — On *E. variegata*, Philippines, Stevens 689; — On *Spatholobus ferrugineus*, Java, BO 10978 p. p. — On *Erythrina* sp., New Guinea, Shaw 607, 1085 (WARI 7754, 7755).

(670) *Meliola erythrinae* Syd. var. *psophocarpi* Hansf., Sydowia **10**: 70. 1957.

Cols. epiphyllous, to 3 mm. diam., numerous and confluent, subdense, thinly velvety. Hyphae slightly undulate, cells mostly 30—40 × 7—9 μ, branching opposite, acute, becoming closely interwoven-reticulate. Ch. alternate only, antrorse or spreading, 17—24 μ long; stc. cylindric, 4—8 μ long; hc. subglobose, piriform or ovate, entire or shallowly rounded-angulose and slightly irregular, 12—18 × 12—15 μ. Mh. mostly separate in centre of colony, opposite or alternate, ampulliform, 20—28 × 7—10 μ, neck elongate. Ms. grouped around P. and thinly scattered over the colonies, straight, to 600 × 9—10 μ, attenuate to paler, simple, obtuse to subacute apex. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 42—48 × 16—18 μ.

On *Psophocarpus tetragonolobus*, Malaya, Johnston 430, type (IMI), 299.

(671) *Meliola bantamensis* Hansf., Reinwardtia **3**: 100. 1954.

Cols. epiphyllous, rarely amphigenous, to 3 mm. diam., usually numerous and confluent, very thin, thinly velvety. Hyphae crooked, cells mostly 20—35 × 6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate only, or more distant, 14—20 μ long, straight or bent; stc. cylindric, 3—6 μ long; hc. versiform, often irregularly bent and angulose to shallowly lobate, rarely wide ovate and entire, 10—14 × 11—15 μ. Mh. numerous in some colonies, separate or mixed with few ch., mostly alternate, ampulliform, 13—16 × 6—9 μ. Ms. thinly scattered, straight, simple, acute, to 500 × 7—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to narrowly subellipsoid, obtuse, 4-septate, slightly constricted, 36—40 × 11—13 μ.

On *Desmodium zonatum*, Java, BO 12562, type; — On *D. scalpe*, Java, BO 15093, with a few opposite ch., BO 11710; — On *D. gangeticum*, Java, BO 15524, 1524, 15237; Philippines, PBS 9058, Baker, Fung. malay. 557, PBS 21830, 24036, 39251 p. p., Stevens 1640 p. p., 1788, 1687 p. p.; — On *D. laxiflorum*, Java, BO 15250; — On *D. virgatum*, Philippines, PBS 23895 p. p.; — On *D.* sp., Philippines, **PBS 11202 p. p., Stevens 769.**

(672) *Meliola bryae* Hansf., Sydowia **10**: 65. 1957.

Cols. amphigenous, to 1 mm. diam. or confluent, subdense. Hyphae substraight, cells mostly 20—30×6—8 μ, branching opposite, acute , loosely to closely radiating-reticu.te. Ch. alternate only, subantrors, straight or slightly bent, 22—32 μ long; stc. cuneate, 7—12 μ long; hc. ovate, entire, 16—20×9—12 μ. Mh. separate in centre of colony, few, opposite or alternate, ampulliform, 16—20× 7—9 μ. Ms. thinly scattered, straight, simple, to 400×8—10 μ, apex subacute or obtuse. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—42×18—20 μ.

On *Brya ebenus*, Jamaica, Martyn in IMI 19663, type.

(673) *Meliola banosensis* Syd., Ann. Mycol. 14: 356. 1916.

Cols. epiphyllous, subdense, numerous and widely confluent. Hyphae substraight to undulate, cells mostly 15—25×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. all alternate, straight or bent, spreading or antrorse, 12—18 μ long; stc. cylindric, 2—5 μ long; hc. more or less globose, entire, 10—13×9—15 μ, often wider than long. Mh. separate, alternate or opposite, ampulliform, 12—18× 6—8 μ. Ms. scattered, straight, simple, acute, to 380×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, 32—38×11—14 μ.

On *Pueraria* sp., Philippines, Baker, Fung. malay. 250 (type), PBS 4016, 2951. — On *Spatholobus gyrocarpus*, Philippines, Stevens 525, with ms. to 800 μ long.

(674) *Meliola vignae-gracilis* Hansf. & Deight., Mycol. Paper, IMI, **23**: 36. 1948.

Cols. epiphyllous, rarely amphigenous, thin, subvelvety, to 2 mm. diam. Hyphae substraight to undulate or flexuous, cells mostly 25—45×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or very rarely opposite (less than 1%), spreading or subantrorse, usually straight, 15—26 μ long; stc. cylindric or cuneate, 6—11 μ long; hc. globose, entire, 10—15×10—14 μ, sometimes slightly bent. Mh. separate, opposite or alternate, ampulliform, 12—18×7—10 μ. Ms. numerous, scattered, simple, subacute to obtuse, to 420×7—8 μ. P. in central group or scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—39× 11—13 μ.

On *Vigna gracilis*, Sierra Leone, Deighton 2175 (type), 2416; — On *Voandzeia subterranea*, Sierra Leone, Deighton 477, 2383; — On *Eriosema spicatum*, Sierra Leone, Deighton 1983; — On *Papilionaceae* indet., Brazil, Ule, Herb. brasil. 2291 (S); On *Vigna* sp., Cameroons, Mackinney in Herb. LKew.

(675) *Meliola bataanensis* Syd., Ann. Mycol. 12: 551. 1914.

Cols. epiphyllous, thin, 2—10 mm. diam. or confluent over the leaf. Hyphae straight to flexuous, cells mostly 25—40×6—7 μ,

branching opposite, acute, loosely interwoven-reticulate. Ch. alternate, straight or slightly bent, 12—18 μ long; antrorse or spreading; stc. cylindric, 2—7 μ long; hc. entire, globose to oblong, straight or bent, 8—13×7—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—24×6—9 μ, neck elongate. Ms. scattered, straight, simple, acute, to 420×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39× 12—14 μ.

On *Millettia* sp., Philippines, PBS 9106, type, 26741; — On *Derris* sp., Philippines, Ramos in Petrak, Mycoth. gener. 302.

(676) *Meliola pterocarpi* Yates, Philipp. Journ. Sci., C. Botany, **13**: 235. 1918.

Cols. epiphyllous, subdense, to 3 mm. diam., subvelvety. Hyphae substraight, cells mostly 20—25×6—7 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 1% opposite, spreading, often recurved, 12—15 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. subglobose to flattened-globose and bent, entire, 8—12 μ long by 11—14 μ wide, Mh. mixed with ch., opposite or alternate, ampulliform, straight or bent, 15—20×6—8 μ. Ms. fairly numerous, straight, simple, acute, to 270×8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—41×12—14 μ.

On *Pterocarpus indicus*, Borneo, Yates 102 (type); Sumatra, Yates 111; Philippines, PBS 30592 (FLS).

(677) *Meliola desmodii-laxiflori* Deighton, Sydowia **11**: 103. 1957.

Cols. epiphyllous and caulicolous, dense, velvety, to 3 mm. diam., often numerous and confluent. Hyphae substraight to undulate on stems, on leaves sinuous to tortuous, branching opposite at wide angles, closely interwoven-reticulate, cells mostly 15—40×6—8 μ. Ch. alternate (very rarely opposite), antrorse or spreading, straight or bent, 13—20 μ long; stc. cylindric, 2—6 μ long; hc. subglobose, oblong or ovate, entire, 11—15×10—14 μ. Mh. separate, opposite or alternate, ampulliform, 14—19×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 380×9—10 μ, mostly about 200 μ long. P. scattered, verrucose, to 200 μ diam. Sp. oblong or often slightly cuneate, obtuse, 4-septate, slightly constricted, 35—43×11—12.5× 9—11 μ.

On leaves, petioles and stems of *Desmodium laxiflorum*, Sierra Leone, Deighton 4504 (IMI 48943, type).

(677 a) *Meliola desmodii-laxiflori* Deight. var. *crotalariae* Deight., Sydowia **11**: 41. 1957.

Cols. caulicolous, dense, velvety, to 5 mm. diam., often numerous and confluent. Hyphae substraight to sinuous, branching opposite at wide angles, densely interwoven-reticulate, cells 15—40×6—9 μ.

Ch. alternate, antrorse or spreading, straight or bent, 14—23 μ long; stc. cylindric, 3—8 μ long; hc. entire, subglobose, oblong or ovate, straight or bent, 11—15×11—15 μ. Mh. separate, opposite or alternate, ampulliform, 12—20×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 700×9—11 μ (mostly 240—440 μ long). P. scattered, verrucose, to 170 μ diam. Sp. oblong to slightly cuneate, obtuse, 4-septate, slightly constricted, 30—42×12—14×11—12 μ.

On *Crotalaria anagyroides*, Malaya, Johnston 1764 (IMI 68893, type).

(678) *Meliola mucunae* Hansf. & Deight., Mycol. Paper, IMI **23**: 36. 1948.

Cols. caulicolous, very dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight, cells mostly 15—20×7—9 μ, branching opposite or irregular, very densely reticulate and almost solid. Ch. alternate, spreading, straight or bent, 14—29 μ long; stc. cylindric, 4—8 μ long; hc. globose to widely clavate, entire, 11—17×11—15 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. very numerous, closely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—39×11—14), branching subellipsoid.

On *Mucuna urens*, Sierra Leone, Deighton 1449 (type), 2384.

(679) *Meliola sydowii* Hansf., Proc. Linn. Soc. London **160**: 122. 1948.

Cols. mostly epiphyllous, thin to subdense, to 4 mm. diam. or confluent, mixed with *M. polyodonta*. Hyphae substraight to slightly undulate, cells mostly 20—30×6—8 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate only, usually sharply bent, spreading, 15—26 μ long; stc. cylindric, 4—8 μ long; hc. irregularly angulose to sublobate, often bent, versiform, 11—15× 9—17 μ. Mh. separate, opposite or alternate, ampulliform, 15—20× 8—10 μ. Ms. thinly scattered, straight, simple, acute or subacute, to 400×7—8 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×14— 16 μ.

On *Papilionaceae* indet., Costy Rica, Sydow, Fung. exot. exs. 620 p. p., type; — On *Bradburya virginiana*, Porto Rico, Whetzel (CUP), Stevens 7460, 7242, 8043, 5036, 7749, 7694.

(680) *Meliola ïonchocarpi* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 358. 1924.

= *Irenina lonchocarpi* (Speg.) Stev., Ann. Mycol. **25**: 457. 1927.

Cols. epiphyllous, thin, effuse and confluent over leaflet. Hyphae substraight, branching opposite or irregular, acute, loosely interwoven-reticulate, cells mostly 25—40×5—6 μ. Ch. alternate, more or less bent, spreading, 12—16 μ long; stc. cylindric, 2—6 μ long; hc. ovate, often bent, sometimes rounded-angulose to sublobate, 11—14× 8—10 μ. Mh. separate, opposite, alternate or sometimes ternate,

ampulliform, 13—16×7—8mμ. Ms. very few, grouped around P., straight, simple, acute, to 250×6—7 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 30—35× 12—13 μ.

On *Lonchocarpus* sp., Argentine, Spegazzini, type.

Other foreign spores occur on the type specimen, larger than those truly belonging to this species, and were included by Spegazzini in his diagnosis; both he and Stevens missed the mycelial setae.

Host Family 146—148. Leguminosae.

The following species were originally described as on undetermined *Leguminosae.*

(681) *Asteridiella usterii* Hansf., Sydowia **10**: 51. 1957.

Cols. epiphyllous, rather thin, to 3 mm. diam. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly about 25×7 μ. Ch. opposite, subantrorse, straight, 13—17 μ long; stc. cylindric, 3—5 μ long; hc. oblong, entire, 9—14×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18× 6—8 μ. P. scattered, verrucose, to 260 μ diam., surface cells conoid, obtuse, to 25 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—41×17—18 μ.

On indet. legume, Brazil, Usteri 43, type (S).

(682) *Meliola pellucida* Gaill., Le Genre Meliola, 1892, p. 103.

Cols. mostly hypophyllous, thin, thinly setose, to 3 mm. diam. Hyphae undulate, branching opposite or irregular, acute to wide, loosely reticulate, cells mostly 17—27×4—6 μ. Ch. alternate or less than 1% opposite, spreading, straight or slightly bent, 11—19 μ long; stc. cylindric, 3—9 μ long; hc. subglobose to wide ovate, entire, often slightly bent, 9—12×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—21×6—8 μ. Ms. loosely scattered and grouped around P., straight or slightly flexuous, to 260×5—7 μ, apex irregularly cristate-dentate to 6 μ, or with 2 branches to 12 μ and these dentate. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—38×13—15×12 μ.

On indet. *Papilionaceae*, Ecuador, Lagerheim in Herb. Patouillard, type (F).

(683) *Meliola castanha* Theiss, Broteria **12**: 24. 1914.

Cols. 2—4 mm. diam.; hyphae 10—14 μ wide ,asperulate-granulose, branching usually opposite, cells about 40 μ long; Ch. alternate, straight or rarely recurved, 30—32 μ long; hc. clavate, entire, 12—16 μ wide. Mh. ampulliform. Ms. straight, to 500×10 μ, acute or laterally denticulate at apex. P. in close central group, verrucose,

200—250 μ diam. Sp. cylindric, 4-septate, constricted, 56—66× 24—28 μ.

On indet. *Leguminosae*, Brazil, Theissen, type.

Specimens of this species have not been traced by the present author.

(684) *Meliola motatanensis* Hansf., Sydowia **10**: 79. 1957.

(3113.4223) — Cols. epiphyllous, to 3 mm. diam., thin. Hyphae straight or slightly undulate, cells mostly 30—40×8—10 μ, branching opposite, acute, loosely radiating-reticulate. Ch. opposite or alternate in varying proportions, more or less antrorse, straight or bent, 19—24 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. ovate to clavate, entire or rounded-angulose, straight or bent, 13—18×10—13 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 18—25× 8—10 μ, neck elongate. Ms. thinly scattered, and grouped around P., straight, simple, subacute, to 650×9—10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—43×16—18 μ.

On indet. legume, Venezuela, Chardon 924, type. (CUP).

Host Family 151. Hamamelidaceae.

(685) **Asteridiella scabra** (Doidge) Hansf., comb. n.

= *Meliola scabra* Doidge, Trans. Roy. Soc. South Africa, **7**: 194. 1919.

= *Irene scabra* Doidge, South African Journ. Nat. Hist. **2**: 40. 1920.

= *Irenina scabra* (Doidge) Stevens, Ann. Mycol. **25**: 464. 1927.

Cols. amphigenous, thin, to 10 mm. diam. Hyphae straight or undulate, cells mostly 20—35×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 23—38 μ long; stc. cylindric to cuneate, 6—14 μ long; hc. ovate or bent, usually irregularly rounded-angulose to sublobate, 14—24×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. none. P. scattered, verurcose, to 250 μ diam., surface cells rounded to obtusely conoid. Sp. cylindric to subellipsoid, 4-septate, constricted, obtuse, 35—40×14—17 μ.

On *Trichocladus ellipticus*, South Africa, PRET 8891, 9462, 11338, 12298; — On *T. crinitus*, South Africa, PRET 10939, 11611, 20382.

(686) *Meliola torta* Doidge, Trans, Roy. Soc. South Africa **5**: 726. 1917.

(3111.6343) — Cols. amphigenous, thin, to 10 mm. diam. Hyphae undulate to crooked, cells mostly 25—40×6—7 μ, branching irregular at wide angles, loosely and irregularly interwoven-reticulate. Ch. alternate or more scattered, usually irregularly bent, spreading,

25—40—(60) μ long; stc. cylindric to cuneate, often irregularly bent, sometimes 1—2-septate, 10—20—(40μ) long; hc. versiform, variously lobate and often uncinate to bent, rounded or truncate at apex, mostly 14—25×14—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—36×6—7 μ, rarely 1-septate, neck elongate. Ms. mostly grouped around P., straight or sub-falcate, simple, acute, to 600×10—11 μ, gradually attenuate upwards. P. scattered, verrucose, to 400 μ diam., surface cells large, mammillate, projecting. Sp. ellipsoid to subfusoid, obtuse, 4-septate, constricted, 54—67×20—22 μ, the middle cell distinctly the largest.

On *Trichocladus crinitus*, South Africa, PRET 9064, 10939, 11610, 17170, 17195.

Host Family 154. Buxaceae.

(687) *Meliola buxi* Cif., Ann. Mycol. **36**: 206. 1938.

(2111.5223) — Cols. epiphyllous, dense, velvety, to 3 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 20—40×6—8 μ, branching alternate or irregular, rarely opposite, acute closely reticulate. Ch. alternate, subantrorse, straight or bent, 23—30 μ long; stc. cylindric or with sinuous to crenulate sides, 5—12 μ long; hc. deeply crenate-lobate, very variable, often bent, 15—20×10—16 μ. Mh. mixed with ch., alternate, ampulliform, 15—22×7—10 μ. Ms. numerous, scattered, straight, simple, acute, to 600×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 3-septate, slightly constricted, 49—56×15—17 μ.

On *Buxus glomerata*, San Domingo, Ciferri, Mycofl. doming. exs. 218, type.

(688) *Meliola buxicola* Doidge, Bothalia 2: 452. 1928.

(3113.4332) — Cols. amphigenous, mostly epiphyllous, velvety, dense, to 5 mm. diam. Hyphae substraight, cells mostly 13—20×6—8 μ, branching close, opposite, acute, densely radiating-reticulate. Ch. opposite or alternate, somewhat antrorse, straight or bent, 15—24 μ long; stc. cylindric to cuneate, often antrorse-bent, 4—10 μ long; hc. subglobose to short piriform, entire, straight, 11—15×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—9 μ. Ms. numerous, scattered, straight, simple, subacute, to 350×7—9 μ, gradually attenuate upwards. P. scattered, verrucose, to 250 μ diam., surface cells convex to obtuse conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—47×16—22 μ.

On *Buxus macowani*, South Africa, PRET 22388, type.

Host Family 157. Garryaceae.

(689) *Meliola garryae* Hansf., Sydowia **9**: 17. 1955.

(3111.5223) — Cols. to 5 mm. diam., or numerous and confluent,

dense, velvety. Hyphae substraight to sinuous, cells mostly 20—35× 7—8 μ, branching alternate or irregular, acute, forming densely radiating-reticulate colony. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 5—15 μ long; hc. irregularly clavate, angulose or shallowly lobate, often bent, 15—20× 11—16 μ. Mh. mostly separate, opposite or alternate, ampulliform, 18—26×8—11 μ, neck elongate. Ms. fairly numerous, scattered, straight, simple, acute, to 600—9×10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—50×17—19×12—14 μ.

On *Garrya* sp., U.S.A., Lindheimer 3644, type (K).

Host Family 159. Myricaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

2101.3220	Cols. thin; P. to 190 μ; sp. small	*manca*	(690)
2101.5240	Cols. dense; P. to 360 μ; sp. large	*myricicola*	(691)

Meliola

2111.6332	Cols. dense; hc. large, very irregularly lobate; ms. obtuse	*myricae*	(692)
3111.5221	Cols. dense; hc. subglobose, entire or slightly angulose; ms. subacute	*myricicola*	(693)

(690) *Asteridiella manca* (E. & M.) Hansf., Sydowia **10**: 49. 1957.
= *Meliola manca* Ell. & Mart., Amer. Natural. **17**: 1284. 1883.
= *Irene manca* (E. & M.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.
= *Irenina manca* (E. & M.) Stev., l. c., **25**: 488. 1927.
= *Meliola manca* E. & M. var. *tenuis* Wint. in Gaill., Le Genre *Meliola*, 1892, p. 38.

Cols. amphigenous, to 6 mm. diam., thinner and larger on lower surface. Hyphae substraight to undulate, cells mostly 20—30× 6—7 μ, branching opposite or irregular, acute, loosely to rather closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 14—20 μ long; stc. cylindric or cuneate, 4—7 μ long; hc. subglobose, clavate or piriform, entire or rounded-angulose to shallowly lobate, 9—14×9—12 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15—19×6—8 μ. P. scattered, rough, to 190 μ diam., surface cells obtusely conoid, to 25 μ high. Sp. cylindric, obtuse, straight or slightly bent, 3-septate, constricted, 38—45×13—15 μ.

On *Myrica* sp. Florida, U.S.A., Ellis, N. Amer. fung. 1292 (type), *Calkins*, s. n. (S), *Thaxter* 3821 (F), *Tracy* 7290, *Martin* in FLS 20273; Costa Rica, *Stevens* 102; — On *M. cerifera*, Porto Rico, Stevens 5289, 5250, Heller 6420; San Domingo, Ciferri 3317 (S), Ciferri,

Mycofl. doming. exs. 63; — On *M. rubra*, Formosa, Yamamoto; — On *M.* sp., Uganda, Hansford 2704.

(691) *Asteridiella myricicoïa* Hansf., Sydowia **10**: 49. 1957.
= *Irenina myricicola* Hansf., Proc. Linn. Soc. London **158**: 31. 1947.

Cols. amphigenous, mostly epiphyllous, subdense, to 1 mm. diam., or numerous and confluent. Hyphae on upper surface straight, on lower surface undulate to sinuous, cells mostly 15—20×7—8.5 μ, branching close, at wide angles, densely reticulate. Ch. alternate or less than 1% opposite, antrorse, usually straight, 14—20 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. clavate and entire, or usually angulose to shallowly 2—3-lobate, 10—14×9—14 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 15—20×8—9 μ. P. scattered, or single in centre of smaller colonies, to 360 μ diam., surface cells mammillate to obtusely conoid, projecting to 25 μ. Sp. oblong, obtuse, 3-septate, slightly constricted, 46—55×13—17 μ often slightly bent.

On *Myrica* sp., Congo Belge, Hendrickx 2524, type.

(692) *Meliola myricae* Hansf., Proc. Linn. Soc. London **157**: 178. 1946.

Cols. epiphyllous, dense, to 3 mm. diam., rarely hyphophyllous. Hyphae undulate to sinuous, cells mostly 20—40×7—9 μ, branching alternate or irregular, rarely opposite, acute, densely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or irregularly bent, 28—40 μ long; stc. cylindric to irregular, 5—15 μ long, often bent; hc. versiform, very irregularly sinuous to lobate, often bent, 20—28×12—20 μ. Mh. mixed with ch., mostly alternate, ampulliform, 25—32×9—13 μ. Ms. few to fairly numerous, straight or slightly bent, simple, obtuse, to 400×8—10 μ. P. scattered, verrucose, to 280 μ diam. Sp. fusoid with rounded-conoid ends, usually more or less bent, 3-septate, 57—63×18—22 μ, the central cells larger than the end cells.

On *Myrica salicifolia*, Congo Belge, Hendrickx 1670, type.

(693) *Meliola myricicola* Hansf., Proc. Linn. Soc. London **158**: 31. 1946.

Cols. epiphyllous, dense, to 2 mm. diam., usually numerous and confluent. Hyphae straight or undulate, cells mostly 15—25×8—10 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate only, straight or bent, more or less antrorse, 18—25 μ long; stc. cuneate, 4—9 μ long; hc. subglobose, entire or less commonly slightly angulose, 12—17×12—15 μ. Mh. separate, opposite or alternate, ampulliform, 13—21×8—10 μ. Ms. scattered, straight, simple, subacute, to 280×8—10 μ. P. in central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55×16—18 μ, usually straight.

On *Myrica* sp., Congo Belge, Hendrickx 2866, type.

Host Family 163. Fagaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

3203.5330 Cols. thin; hc. oblong to subglobose, entire; app. straight or bent, obtuse, to 53 × 20 μ .. *lithocarpicola* (694)

3203.4330 Cols. dense; hc. ellipsoid-oblong, entire; app. straight or bent, obtuse, septate, to 42 × 28 μ *castanopsisifoliae* (695)

3201.5330 Cols. dense; hc. oblong-ellipsoid, entire; app. to 50 × 20 μ ..... *konishii* (696)

3201.5330 Cols. dense, crustose; hc. subglobose to ellipsoid; app. straight or slightly bent, to 46 × 20 μ ..... *sinsuiensis* (697)

3201.5230 Cols. subdense; hc. ellipsoid-oblong, entire; app. to 53 × 20 μ ..... *arisanensis* (698)

Irenopsis

3¾01.3220 Cols. dense; hc. oblong or angulose; ps. obtuse, 2-3-septate, smooth, straight or apex bent to coiled, to 110 μ ..... *quercifolia* (699)

3¾01.4320 Cols. dense; hc. cylindric to subglobose, entire; ps. to 165 μ, obtuse, straight or twisted, hispid at apex ..... *costariensis* (700)

Asteridiella

3103.5330 Cols. dense; hc. cylindric-clavate, entire or angulose; P-cells obtuse conoid, to 15 μ high *quercina* (701)

3101.5330 Cols. crustose, dense; hc. ovate, entire ..... *cyclobalanopsicola* (702)

3101.53×0 Cols. dense; hc. large, lobate..... *castanopsidis* (703)

Meliola

3213.6334 Cols. thin; hc. ovate-oblong, entire; ms. obtuse; app. corniform, curved, to 55 × 30 μ; sp. fusoid ..... *fusispora* (704)

3143.3231 Cols. dense, velvety; hc. subglobose to ellipsoid, entire; ms. 1-3-dichotomous ..... *kodaihoensis* (705)

3141.6332 Cols. thin, velvety; hc. oblong to subglobose, entire; ms. 2-3-furcate with dentate braches; sp. fusoid ..... *subacuminata* (706)

3143.5242 Cols. caulicolous, velvety; hc. subglobose; ms. 2-3-furcate and dentate; sp. oblong-ellipsoid ..... *ramulicola* (707)

3133.5322 Cols. thin; hc. oblong-clavate, entire; or angulose; ms. dentate-furcate to 10 μ; sp. ellipsoid-fusoid..... *castanopsidis* (708)

3131.5333 Cols. thin to subdense; hc. cylindric, entire; ms. cristate-dentate to 7 μ; sp. oblong ..... *taityuensis* (709)

31⅓3.6 333 Cols. velvety, dense; hc. subglobose to ellipsoid, entire or subangulose; ms. obtuse or 2-3-dentate; sp. oblong-ellipsoid..... *subpellucida* (710)

31⅓3.5324 Cols. thin; hc. ellipsoid to subglobose, entire; ms. 2-3-dentate; sp. ellipsoid to oblong ..... *castanopsina* (711)

31⅓1.6334	Cols. thin; hc. ellipsoid to ovoid, entire or angulose; ms. acute or dentate; sp. ellipsoid .	*taiwaniana*	(712)
31⅓1.5334	Cols. dense, velvety; hc. globose to ovoid, entire or angulose; ms. obtuse or 3-5-dentate-cristate; sp. oblong-ellipsoid	*melanochaeta*	(713)
3111.6332	Cols. dense, velvety; hc. oblong-ovoid, entire; ms. acute; sp. oblong	*lithocarpina*	(714)
3111.6333	Cols. dense, velvety; hc. oblong to ellipsoid, entire or sublobate; ms. acute; sp. fusoid....	*kiraiensis*	(715)
3111.5333	Cols. subdense, velvety; hc. ovate-ellipsoid, entire; ms. acute or obtuse; sp. oblong	*kawakamii*	(716)
3111.5233	Cols. thin; hc. subglobose to ellipsoid, entire; ms. acute; sp. ellipsoid to oblong	*cyclobalanopsina*	(717)
3111.4333	Cols. thin; hc. cylindric, entire; ms. obtuse or acute; sp. oblong	*shiiae*	(718)
3111.53×4	Cols. thin; hyphae substraight; hc. ovate to oblong; ms. subacute	*quercina*	(719)

(694) **Appendiculella lithocarpicola** (Yamam.) Hansf., comb. n.
= *Irene lithocarpicoïa* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 218. 1941.

Cols. hypophyllous, effuse, to 15 mm. diam., thin. Hyphae strongly undulate to tortuous, cells 23—47×5—9 μ, branching opposite or irregular, loosely reticulate. Ch. opposite or alternate, more or less bent, 15—28 μ long; stc. cylindric, 5—14 μ long; hc. oblong, ovate or subglobose, entire, 9—14×9 μ. Mh. mixed with ch., alternate, ampulliform, 16—23×7—8 μ. P. in central group, verrucose, to 225 μ diam.; app. corniform, straight or bent, brown, 21—53×19—21 μ thick at base, attenuate to rounded-truncate apex. Sp. ellipsoid to oblong, obtuse, 4-septate, slightly constricted, 48—60×q4—23 μ, the middle cell slightly the largest.

On *Synaedrys amygdalifolia*, Formosa, Yamamoto, type (not seen by present author).

(695) **Appendiculella castanopsisifoliae** (Yama.) Hansf., comb. n.
= *Irene castanopsisifoïiae* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 217. 1941.

Cols. amphigenous, mostly hypophyllous, to 4 mm. diam., dense. Hyphae undulate, cells 12—21×6—7 μ, branching opposite or irregular, densely reticulate. Ch. alternate or sometimes opposite, straight or slightly bent, 13—20 μ long; stc. cylindric, 3—7 μ long; hc. ellipsoid to oblong, entire, 9—14×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—19×6—8 μ. P. scattered, verrucose, to 250 μ diam.; app. corniform, often slightly bent, rounded or truncate at apex, transversely septate and longitudinally septate below, 21—42×23—28 μ thick at base. Sp. oblong, obtuse, 4-septate, constricted, 39—48×12—23 μ.

On *Synaedrys amygdalifolius*, Formosa, Yamamoto, type (not seen by present author).

(696) **Appendiculella konishii** (Yamam.) Hansf., comb. n.

= *Irene konishii* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 217. 1941.

Cols. epiphyllous, to 3 mm. diam., subdense. Hyphae straight to slightly undulate, cells 18—23×7—9 μ, branching opposite, rather closely reticulate. Ch. alternate, straight or bent, 18—24 μ long; stc. cylindric, 3—7 μ long; hc. oblong to ellipsoid, entire, 14—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—23×7—9 μ. P. scattered or in a central group, verrucose, to 250 μ diam.; app. corniform, 40—50×16—21 μ thick at base. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—55×14—23 μ, the central cell slightly the largest.

On *Synaedrys konishii*, Formosa, Yamamoto, type (not seen by present author).

(697) **Appendiculella sinsuiensis** (Yamam.) Hansf., comb. n.

= *Irene sinsuiensis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 219. 1941.

= *Meliola yamamoto* Cif., Mycopath. **7**: 88. 1954.

Cols. epiphyllous, dense, crustose, to 3 mm. diam. Hyphae straight or slightly undulate, cells 12—19×8—10 μ, branching opposite or alternate, densely interwoven-reticulate. Ch. alternate, crowded, 16—24 μ long; stc. cylindric, 5—9 μ long; hc. subglobose to ellipsoid or oblong, 10—14×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—23×7—9 μ. P. scattered or in loose central group, verrucose, to 240 μ diam.; app. corniform, straight or slightly bent, 21—46×12—21 μ thick at base. Sp. oblong, obtuse, 4-septate, constricted slightly, 46—52×16—25 μ.

On *Synaedrys sinsuiensis*, Formosa, Yamamoto, type (not seen by present author).

(698) **Appendiculella arisanensis** (Yamam.) Hansf., comb. n.

= Irene arisanensis Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 216. 1941.

Cols. mostly hypophyllous, to 7 mm. diam. or confluent, thin to subdense. Hyphae undulate, sinuous or crooked, cells 14—35×7—7 μ, branching opposite or irregular, loosely to rather densely reticulate. Ch. alternate, slightly bent, 16—25 μ long; stc. cylindric, 5—14 μ long; hc. ellipsoid to oblong, entire, 10—14×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—25×7—8 μ. P. scattered, verrucose, to 240 μ diam.; app. linear, curved, rounded at apex, transversely septate and the lower part longitudinally septate, 23—53×14—21 μ thick at vase. Sp. ellipsoid to oblong, obtuse, 4-septate, 44—54×14—19 μ, the central cell largest and darker brown.

On *Cyclobalanopsis ternaticupula*, Formosa, Yamamoto, type (not seen by present author).

(699) *Irenopsis quercifolia* Hansf., Sydowia **9**: 3. 1955.

Cols. epiphyllous, rather dense, to 4 mm. diam. or sometimes confluent. Hyphae somewhat undulate, cells mostly 15—20×6—7 μ, branching opposite at varied angles, loosely to rather closely interwoven-reticulate. Ch. alternate, usually slightly bent, often reflexed, 15—22 μ long; stc. cylindric, 3—7 μ long; hc. oblong with rounded apex or often irregularly rounded-angulose, sometimes sublobate, often bent, 12—18×8—11 μ. Mh. mixed with ch., numerous, opposite, alternate or ternate, ampulliform, 15—23×7—9 μ. P. scattered, verrucose, to 180 μ diam.; ps. 3—12, erect-spreading, dark brown, obtuse, smooth, 2—3-septate, to 110×6—7 μ, apex straight, or bent to slightly coiled. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 34—39×15—18×12—14 μ.

On *Quercus nigra*, U. S. A., Fulton s. n., (type) (F), Thaxter, s. n., Martin, s. n. (F).

(700) *Irenopsis costaricensis* Stev., Ann. Mycol. **25**: 437. 1927.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam. Hyphae substraight to undulate, branching opposite at wide angles, closely interwoven-reticulate, cells mostly 25—35×6—7 μ. Ch. alternate, antrorse or spreading, usually bent, 24—30 μ long; stc. cylindric, 5—11 μ long; hc. ovate, cylindric or clavate, entire or somewhat irregularly angulose, usually bent, 15—22×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×7—8 μ. P. scattered, verrucose, to 190 μ diam.; ps. 6—20, arising from sides of P., straight below, bent to contorted at apex, obtuse, dark brown, continuous, asperate above, to 165×8 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—48×18—22 μ.

On *Quercus oocarpa*, Costa Rica, Stevens 64, type (FLS).

(701) *Asteridiella quercina* Hansf., Sydowia **10**: 50. 1957.
= *Irenina quercina* Hansf., Farlowia **3**: 273. 1948.

Cols. epiphyllous, rarely hypophyllous, dense, to 5 mm. diam. or numerous and sometimes confluent. Hyphae substraight to undulate, cells 12—20×7—8 μ, branching opposite at wide angles, very densely reticulate. Ch. alternate, or less than 1% opposite, straight or slightly bent, antrorse or spreading, 17—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. cylindric to slightly clavate, entire or rounded angulose to sublobate, 12—17×8—14 μ, straight or bent. Mh. few, mixed with ch., alternate, ampulliform, 17—21×7—9 μ. P. in loose central group, to 250 μ diam., surface cells obtusely conoid, about 30 μ diam. and to 15 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 45—53×18—23 μ.

On *Quercus* sp., China, Cheo 1554, type (F);

On *Q. ovalis*, Philippines, PBS 21770 (IMI), with spores 52—58×24—28 μ.

(702) *Asteridiella cyclobalanopsicola* (Yamam.) Hansf., Sydowia **10**: 47. 1957.

= *Irenina cyclobalanopsicola* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 219. 1941.

Cols. epiphyllous, dense, crustose, to 3 mm. diam. Hyphae straight or slightly undulate, cells 12—23×8—10 μ, branching opposite, densely reticulate. Ch. alternate, crowded, 16—23 μ long; stc. cylindric, 5—8 μ long; hc. ovate, entire, 11—15×10—13 μ. Mh. not numerous, mixed with ch., opposite or alternate, ampulliform, 16—23×8—9 μ. P. scattered or in loose central group, verrucose, to 280 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55×14—23 μ.

On *Cyclobalanopsis ternaticupula*, Formosa, Yamamoto, type (not seen by present author).

(703) *Asteridiella castanopsidis* Hansf., Sydowia **10**: 47. 1957.

= *Irenina castanopsidis* Hansf., Farlowia **3**: 271. 1948.

Cols. amphigenous, mostly epiphyllous, dense, to 7 mm. diam. or sometimes confluent. Hyphae substraight to undulate, cells mostly 20—30×8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading or antrorse-bent, 22—40 μ long; stc. cylindric to cuneate, often bent, 8—12 μ long; hc. clavate-cylindric, often irregularly bent, apex rounded or often truncate, sides sinuous to lobate, versiform, 18—30×12—16 μ. Mh. few, alternate op opposite, mixed with ch., ampulliform, 16—22×8 μ. Mature P. not seen. Sp. oblong to ellipsoid, obtuse, 4-septate, strongly constricted, 46—53×22—25 μ.

On *Castanopsis tibetana*, China, Cheo 758, type (F).

(704) *Meliola fusispora* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 126. 1941.

Cols. hypophyllous, to 9 mm. diam., thin. Hyphae undulate to tortuous, cells 25—44×7—10 μ, branching opposite or irregular, loosely reticulate. Ch. alternate or rarely opposite, more or less bent, 19—30 μ long; stc. cylindric, 5—14 μ long; hc. ovate, ellipsoid or oblong, entire, 14—21×9—16 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 21—32×8—11 μ. Ms. fairly numerous, mostly grouped around P., simple, obtuse, straight or slightly bent, to 1800×14—16 μ. P. scattered or in central loose group, verrucose, to 300 μ diam., with corniform appendages, often bent, truncate or rounded at apex, 25—55×21—30 μ. Sp. fusoid, sometimes slightly bent, ends obtuse or subacute, 4-septate, slightly constricted, 53—67×16—23 μ, the middle cell much the largest.

On *Castanopsis stipitata*, Formosa, Yamamoto, type (not seen by present author).

(705) *Meliola kodaihoensis* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 133. 1941.

Cols. caulicolous and on petioles, dense, velvety, crustose, to

20 mm. long. Hyphae straight or slightly undulate, cells 10—23× 5—7 μ, branching usually opposite, densely interwoven-reticulate. Ch. mostly opposite, crowded, straight or bent, 13—19 μ long; stc. cylindric, 4—9 μ long; hc. ellipsoid to subglobose, 8—10×7—8 μ, entire. Mh. few, mixed with ch., opposite, ampulliform, 14—23× 6—8 μ. Ms. numerous, closely fasciculate, straight, to 250×7—9 μ, 1—3-dichotomous above, the branches more or less recurved, 28—88 μ long, tips acute, 4—14 μ long. P. in central group, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—39×9—15 μ.

On *Synaedrys kodaihoensis*, Formosa, Yamamoto, type (not seen by present author).

(706) *Meliola subacuminata* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 127. 1941.

Cols. hypophyllous, scattered, more or less velvety, to 15 mm. diam., thin. Hyphae undulate to crooked, cells 14—16×7—9 μ, branching irregular, loosely reticulate. Ch. alternate, often remote, more or less bent, 15—35 μ long; stc. cylindric, often bent, 5—16 μ long; hc. oblong, ovoid or subglobose, entire, 10—21×12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 26—35×8—10 μ. Ms. fairly numerous, mostly grouped around P., straight or somewha bent, to 500×11—13 μ, apex 2—3-furcate to 25 μ, and branches 2—3-dentate. P. scattered or in loose group, verrucose, to 280 μ diam. Sp. elongate fusoid, obtuse to subacute, 4-septate, slightly constricted, 60—74×18—22 μ, the middle cell much the largest.

On *Castanopsis subacuminata*, Formosa, Yamamoto, type (not seen by present author).

(707) *Meliola ramulicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 134, 1941.

Cols. caulicolous, elongate, to 40 mm. long, dense, velvety. Hyphae more or less undulate, cells 18—44×7—9 μ, brynching opposite or irregular, densely interwoven-reticulate. Ch. alternate or opposite, usually crowded, straight or bent, 18—25 μ long; stc. cuneate, 5—9 μ long; hc. subglobose, entire, 13—17×14—17 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—32×8—12 μ. Ms. numerous, scattered, straight or slightly bent, to 500×10—14 μ, apex 2—3-furcate to 35 μ, branches sometimes 2—3-dentate, acute. P. in central group, verrucose, to 360 μ diam. Sp. ellipsoid to oblong, 4-septate, 44—55×12—18 μ, obtuse, slightly constricted, the middle cell slightly the largest.

On *Synaedrys brevicaudata*, Formosa, Yamamoto, type (IMI).

(708) *Meliola castanopsidis* Hansf., Farlowia **3**: 275. 1948.

Cols. hypophyllous, thin, to 20 mm. diam. Hyphae sinuous to very crooked, cells mostly 20—30×4.5—6 μ, branching irregular, sometimes dichotomous, at wide angles, loosely reticulate. Ch. alternate or opposite, formed behind the distal septum of parent cell, more

or less bent, 12—23 μ long; spreading; stc. cylindric, often bent, 3—9 μ long; hc. cylindric, clavate, or rounded-angulose, sometimes sublobate, often sharply bent, 8—14×6—10 μ. Mh. few, alternate, ampulliform, 14—18×5—6 μ. Ms. thinly scattered, and grouped around P., straight, to 400×7—8 μ, apex 2—4-dentate to 8 μ, rarely shortly 2-furcate to 10 μ, with dentate branches. P. scattered, verrucose, to 200 μ diam. Sp. ellipsoid to subfusoid, ends obtusely attenuate, 4-septate, slightly constricted, 45—56×16—20 μ, the middle cell much the largest.

On *Castanopsis tibetana*, China, Cheo 758, type (F).

(709) *Meliola taityuensis* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 131. 1941.

Cols. epiphyllous, thin to subdense, to 4 mm. diam. Hyphae substraight to slightly undulate, branching opposite, acute to wide, loosely to closely reticulate, cells mostly 20—25×8—9 μ. Ch. alternate, subantrorse, straight or slightly bent, 23—30 μ long; stc. cylindric, 5—7 μ long; hc. cylindric, entire, rounded at apex and often slightly attenuate, 17—23×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—28×7—8 μ, neck elongate. Ms. mostly grouped around P., straight or slightly bent, to 715×9—10 μ, simple, obtuse (immature; Yamamoto gives apex cristate-dentate to 7 μ). P. scattered, verrucose, to 225 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—48×19—23×14—17 μ (few seen; Yamamoto gives 44—53×14—23 μ).

On *Cyclobalanopsis glauca*, Formosa, Yamamoto (USDA).

(710) *Meliola subpellucida* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 136. 1941.

Cols. hypophyllous, mostly on the main leaf-veins, elongate, more or less velvety, dense, 3—6 mm. long. Hyphae sinuous to crooked, cells 16—50×7—9 μ, branching irregular, closely reticulate. Ch. alternate or sometimes opposite, 14—26 μ long; stc. cylindric, 4—14 μ long; hc. subglobose, ellipsoid, ovate or sometimes slightly rounded-angulose, 9—16×10—16 μ. Ms. few, mixed with ch., alternate, ampulliform, 14—25×8—9 μ. Ms. fairly numerous, straight or bent, to 530—14×16 μ, apex obtuse or 2—3-dentate §6—32 μ), teeth sometimes dentate. P. in loose central group, verrucose, to 250 μ diam. Sp. ellipsoid to oblong, obtuse, curved, 4-septate, slightly constricted, 48—60×16—20 μ, the middle cell slightly the largest.

On *Synaedrys amygdalifolia*, Formosa, Yamamoto, type (not seen by present author).

(711) *Meliola castanopsina* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 125. 1941.

Cols. hypophyllous, to 15 mm. diam., sometimes confluent, thin, thinly velvety. Hyphae sinuous to crooked, cells 18—37×5—8 μ, branching opposite or irregular, loosely reticulate. Ch. alternate,

rarely opposite, more or less bent, 15—28 μ long; stc. cylindric, 5—16 μ long, sometimes 1-septate; hc. ellipsoid, oblong, or subglobose, entire, 9—15×7—10 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 18—30×7—9 μ. Ms. fairly numerous, sometimes grouped around P., straight or slightly bent, acute, or 2—3-dentate (—14 μ), up to 1200×7—10 μ. P. scattered, verrucose, to 200 μ diam. Sp. ellipsoid to cylindric, obtuse, 4-septate, slightly constricted, 44—53× 14—19 μ, the middle cell somewhat the largest.

On *Castanopsis formosana*, Formosa, Yamamoto, type (IMI). — On *C. uraiana*, Formosa, Yamamoto (USDA).

(712) *Meliola taiwaniana* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 128. 1941.

Cols. hypophyllous, indefinite, to 12 mm. diam., thin to dense. Hyphae undulate, sinuous or tortuous, cells 27—55×7—9 μ, branching opposite or irregular, loosely to densely reticulate. Ch. alternate, bent to flexuous, 25—45 μ long; stc. cylindric, 7—25 μ long; hc. ellipsoid, oblong or ovoid, sometimes slightly angulose, 15—25× 9—16 μ. Mh. mixed with ch., alternate, ampulliform, 19—25×8—10 μ. Ms. fairly numerous, mostly grouped around P., simple, acute or sometimes 2—3-dentate to 19), up to 1200×14—16 μ. P. in loose group, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 53—63×18—25 μ, the middle cell slightly the largest.

On *Castanopsis taiwaniana*, Formosa, Yamamoto, type (IMI).

(713) *Meliola melanochaeta* Syd., Ann. Mycol. **26**: 93, 1928.

Cols. hypophyllous, velvety, dense, to 12 mm. diam. Hyphae sinuous to crooked, branching irregular, closely interwoven-reticulate, cells mostly 30—50×5—7 μ. Ch. alternate or more scattered, straight or bent, antrorse or spreading, 20—38 μ long; stc. cylindric, 5—25 μ long; hc. versiform, ovate to cylindric, straight or bent, entire or angulose, 12—22×9—12 μ. Mh. mixed with ch. alternate, ampulliform, 20—25×7—9 μ. Ms. numerous, biform: (a) scattered on mycelium, straight, simple, obtuse, to 1800×10—12 μ, (b) grouped around P., straight, to 600×8—10 μ, apex 3—5-dentate to 12 μ. P. scattered, verrucose, to 280 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—63×21—24×17—19 μ.

On *Quercus spicata*, British North Borneo, Elmer 21770, type (BO).

(714) *Meliola lithocarpina* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 133. 1941.

Cols. mostly hypophyllous, velvety, subdense, to 8 mm. diam. Hyphae undulate to crooked, branching opposite or irregular, acute to wide, loosely to densely interwoven-reticulate, cells mostly 25—40×7—9 μ. Ch. alternate, subantrorse or spreading, usually bent, 21—40 μ long; stc. cylindric, 7—20 μ long; hc. cylindric, ovate, ellipsoid or bent to malleiform, 14—23×9—13 μ. Mh. few, mixed

with ch., alternate, ampulliform, 23—35×7—9 μ, neck elongate. Ms. scattered and grouped around P., straight or slightly bent, simple, acute, to 450×9—11 μ. P. scattered or loosely aggregate, verrucose, to 300 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 64—74×21—23 μ, the middle cell distinctly the largest.

On *Synaedrys brevicaudata*, Formosa, Yamamoto, type (USDA).

(715) *Meliola kiraiensis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 132. 1941.

Cols. hypophyllous, effuse, to 6 mm. diam., thin, subvelvety. Hyphae more or less undulate, cells 19—37×6—9 μ, branching opposite or irregular, loosely to subdensely reticulate. Ch. alternate, more or less bent, 24—38 μ long; stc. cylindric, 7—16 μ long; hc. oblong, ovoid or ellipsoid, sometimes angulose or sublobate, 16—25× 8—13 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 23—35×6—8 μ. Ms. fairly numerous, simple, straight or slightly bent, acute, to 570×9—10 μ. P. scattered, verrucose, to 280 μ diam. Sp. elongate fusoid, slightly bnet, ends obtuse to subacute, 4-septate, constricted, 60—78×16—20 μ, the middle cell slightly the largest.

On *Synaedrys lepidocarpa*, Formosa, Yamamoto, type (not seen by present author).

(716) *Meliola kawakamii* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 131. 1914.

Cols. epiphyllous, more or less velvety, subdense, to 4 mm. diam. Hyphae straight or slightly undulate, cells 16—25×7—9 μ, branching opposite, loosely to closely reticulate. Ch. alternate, straight or llightly bent, 17—25 μ long; stc. cylindric, 2—7 μ long; hc. ovate to ellipsoid, entire, 14—19×9—11 μ. Mh. not numerous, mixed with ch., opposite or alternate, ampulliform, 18—28×7—9 μ. Ms. mostly around P., simple, acute or obtuse, straight or slightly bent, to 760×9—12 μ. P. in loose group, verrucose, to 225 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—55×14—22 μ.

On *Synaedrys kawakamii*, Formosa, Yamamoto, type (not seen by present author).

(717) *Meliola cyclobalanopsina* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 130. 1941.

Cols. hypophyllous, thin to subdense, velvety, to 15 mm. diam. Hyphae undulate to crooked, branching opposite or irregular, acute to wide, loosely to closely reticulate-interwoven. Ch. alternate or more scattered, usually formed well behind distal septum of parent cell, spreading or subantrorse, more or less bent, 14—25 μ long; stc. cylindric, 5—12 μ long; hc. oblong, ovate or subglobose, often bent, entire, 7—16×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—27×7—8 μ. Ms. fairly numerous, scattered and grouped around P., straight or slightly bent, simple, acute, to 870×8—10 μ.

P. scattered, verrucose, to 220 μ diam. Sp. bent fusoid with obtuse ends, 4-septate, constricted, 43—53×15—17×14—18 μ.

On *Cyclobalanopsis glauca*, Formosa, Yamamoto (co-type in USDA).

(718) *Meliola shiiae* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 126. 1941.

Cols. mostly epiphyllous, to 5 mm. diam., thin. Hyphae straight or slightly undulate, branching opposite, acute to wide, loosely reticulate, cells mostly 20—27×6—7 μ. Ch. alternate, subantrorse or spreading, straight or slightly bent, 15—21 μ long; stc. cylindric, 3—6 μ long; hc. cylindric, entire, rounded and sometimes very slightly attenuate at apex, 11—16×6—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23×7—8 μ. Ms. mostly grouped around P., straight or slightly bent, simple, acute when fully mature, to 560×9—10 μ. P. scattered, verrucose, to 225 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—44×17—20×13—16 μ.

On *Castanopsis stipitata*, Formosa, Yamamoto (USDA).

(719) *Meliola quercina* Pat., Journ. de Bot. **4**: 61. 1890.

= *Leptomeliola quercina* (Pat.) Hoehn., Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **128**: 558. 1919, pro parte.

= *Meliolinopsis quercina* (Pat.) Beeli, Bull. Jard. Bot. Bruxelles **7**: 119. 1920.

Cols. epiphyllous, thin, to 5 mm. diam., mostly parasitised by *Arthrobotryum* and then without setae or perithecia. Hyphae substraight, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×8—9 μ. Ch. alternate, spreading, straight or slightly bent, 19—34 μ long; stc. cylindric, 5—15 μ long; hc. ovate to oblong, obtuse, entire, straight or slightly bent, 14—20×11—14 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 22—38×8—10 μ, neck elongate, flexuous. Ms. mostly grouped around P., straight, simple, subacute, to 1200×11—13 μ, gradually attenuate to 2 μ at apex. Mature P. not seen. Sp. oblong, obtuse 4-septate, constricted, 55—59×20 22 μ (few seen).

On *Quercus* sp., Tonkin, Balansa, type in Herb. Patouillard (F); Balansa in Roum. Fung. sel. exs. 5945 (P).

Host Family 165. Ulmaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4220 Cols. thin; hyphae substraight; hc. ovate to sublobate; P-cells conoid-mammillate, to 25 μ high ..... *tremae* (720)

Meliola

3133.3222 Cols. thin; hyphae undulate; hc. subglobose-piriform; ms. dentate ..... *cabellensis* (721)

31⅓1.5222	Cols. dense, velvety; hyphae undulate; hc. globose-ovate; ms. acute or dentate	*chaetachmes*	(722)
3121.5332	Cols. dense; hyphae sinuous; hc. lobate; ms. hamate, acute	*delticola*	(723)
3111.5234	Cols. dense, velvety; hc. lobate; ms. straight, obtuse	*celtidis*	(724)
3111.5333	Cols. dense; hc. crenate-lobate; ms. straight, obtuse	*celtidis* var. *prantlii*	(725)
3131.3222	Cols. thin; hc. globose-ovate, entire; ms. dentate-furcate	*celtidum*	(726)

(720) *Asteridiella tremae* (Speg.) Hansf., Sydowia **10**: 50. 1957.
= *Meliola tremae* Speg., Anal. Mus. Nac. Buenos Aires **23**: 45. 1912.
= *Irenina tremae* (Speg.) Stev., Ann. Mycol. Berlin **25**: 457. 1927.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—40×5—7 μ, branching opposite at varied angles, loosely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 20—29 μ long; stc. cuneate to cylindric, 6—10 μ long; hc. ovate, elliptic or subglobose, often truncate at apex, sometimes irregularly 2—3-sublobate, 13—17×9—14 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, 13—20×6—8 μ. P. loosely scattered, verrucose, to 210 μ diam., surface cells obtuse conoid to bent mammillate, to 25 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, 38—46×16—18 μ.

On *Trema micrantha*, Argentina, Venturi 28, type (SPEG 1810); — On *T. guineense*, Uganda, Hansford 2571, 2700, 3136; Sierra Leone, Deighton 1595, 1293, 1424, 929-a; Gold Coast, Deighton CB 976; Hughes in IMI 37067, 37065; Congo Belge, Vanderyst 30772, 38872, 38882, 38948, 34008, 39616, 40374, 43113, 43114 (BRUX); — On *T. orientalis*, Java, BO 8476; — On *T.* sp., Brazil, Ule, Herb. brasil. 1140 (S); Venezuela, Sydow, Fung. exot. exs. 800; Panama, Stevens 771, 973.

(721) *Meliola cabellensis* Syd., Ann. Mycol. Berlin **28**: 53. 1930.

Cols. epiphyllous, to 5 mm. diam., very thin. Hyphae straight or undulate, cells mostly 30—35×5—8 μ, branching opposite at wide angles, very loosely reticulate. Ch. alternate or less commonly opposite, straight or bent, 16—28 μ long; stc. cylindric or cuneate, 4—7 μ long; hc. subglobose, piriform or cylindric, rarely slightly rounded-angulose, 9—21×7—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—24×5—7 μ. Ms. fairly numerous, scattered, straight, to 450×6—8 μ, apex 2—4-dentate-cristate to 4 μ. P. scattered or few-aggregate, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—38×10—15 μ.

On *Celtis aculeata*, Venezuela, Sydow, Fung. exot. exs. 792, type (S, F).

(722) *Meliola chaetachmes* Hansf., Journ. Linn. Soc. London **51**: 539. 1938.

Cols. hypophyllous, velvety, dense, to 15 mm. diam. Hyphae undulate, cells mostly 25—45×7—8 μ, branching alternate or unilateral, rarely opposite, acute, densely interwoven-reticulate. Ch. alternate, often bent or reflexed, subantrorse, 22—32 μ long; stc. cylindric, often bent, 7—13 μ long; hc. subglobose to ovate or piriform, entire, 15—20×9—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×7—8 μ, neck elongate. Ms. numerous, scattered, straight, simple and acute, or 2—3-dentate to 15 μ, to 480×9—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, slightly constricted, 54—59×16—19 μ, middle cell often slightly the largest.

On *Chaetachme microcarpa*, Uganda, Hansford 2092 (type), 2665, 2627, 3031, 2852, 2997; Congo Belge, Hendrickx s. n.!

(723) *Meliola celticola* Yates, Philipp. Journ. Sci., C. Botany, **13**: 366. 1918.

Cols. amphigenous, to 4 mm. diam. or confluent, dense. Hyphae irregularly and finely sinuous to crooked, cells mostly 20—35×7—8 μ, branching alternate or irregular, acute, densely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or bent, 29—38 μ long; stc. cylindric to cuneate, often sinuous in outline, 10—13 μ long; hc. versiform, straight or irregularly bent, deeply rounded-lobate, 20—27×14—19 μ. Mh. mixed with ch., alternate, ampulliform, 20—30×6—8 μ, neck elongate, Ms. few, scattered, simple, hamate, acute or rarely obtuse, to 350×6—10 μ. P. scattered, verrucose, to 225 μ diam. Sp. cylindric. obtuse, 4-septate, rather strongly constricted, 45—51×17—21 μ.

On *Celtis philippinensis*, Philippines, PBS 27746, type: Baker, Fung. malay. 530 p. p. is the same in all characters, save that the setae are straight and acute; PBS 24033 (FLS).

On *C. luzonica*, Philippines, Stevens 1700, 1707 (FLS).

(724) *Meliola celtidis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 367. 1918 (as *M. "celtidiae"*).

Cols. hypophyllous, velvety, to 20 mm. diam., dense. Hyphae crooked, cells mostly 30—40×7—11 μ, irregularly branched, densely reticulate-interwoven. Ch. alternate or more scattered, spreading, usually irregularly bent, 30—50 μ long; stc. cylindric, straight or bent, 6—15 μ long; hc. cylindric to clavate, rarely subglobose, usually much bent and irregularly angulose to lobate, versiform, 12—30×10—20 μ. Mh. separate, opposite or usually alternate, ampulliform, 25—35×7—10 μ, neck elongate, usually much bent. Ms. scattered, straight, erect, simple, obtuse to acute, to 1200×9—13 μ. P. scattered, verrucose, to 225 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 50—55×15—20 μ, the middle cell often slightly the largest.

On *Celtis luzonensis*, Philippines, PBS 24616 (type); — On *C. philippinensis*, Philippines, Stevens 892, 1909, 837, 881, with setae all acute.

(725) *Meliola celtidis* Yates var. *prantlii* Hughes, Mycol. Paper, IMI, 48: 48. 1952.

Cols. amphigenous, dense, to 3 mm. diam. Hyphae sinuous or irregularly torulose, cells mostly 15—22×8—13 μ, branching opposite or irregular, acute or wide densely reticulate. Ch. alternate, straight or bent, subantrorse, 25—35 μ long; stc. cylindric to cuneate, straight or bent, 7—20 μ long; hc. subglobose, irregularly angulose to deeply 3—6-lobate, 19—25 μ diam. Mh. few, mixed with ch., alternate, ampulliform, 18—27 μ long. Ms. mostly grouped around P., straight, simple, obtuse, granulose, to 800×11—14 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 52—58×22—27 μ.

On *Celtis prantlii*, Gold Coast, Hughes in IMI 43581, type. On *C.* sp., Amboina, Robinson 2070.

(726) *Meliola celtidum* Speg., Anal. Mus. Nac. Buenos Aires 32: 368. 1924.

Cols. epiphyllous. to 4 mm. diam., thin ,subvelvety. Hyphae substraight to sinuous, branching opposite or irregular at wide angles, loosely reticulate, becoming closer in places, cells mostly 15—35× 6—7 μ. Ch. alternate or to about 5× opposite, antrorse or spreading, straight or slightly bent, 15—19 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to ovate, entire, 10—14×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—23×7—8 μ, neck elongate. Ms. scattered and grouped around P., to 460×8 μ, apex variously dentate to 15 μ, or with 2 short branches to 15 μ long and dentate. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—40×14—15 μ.

On *Celtis glycicarpa*, Argentina, SPEG 1813, type.

Host Family 167. Moraceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

3301.4230	Cols. thin; hyphae undulate to crooked; hc. entire or angulose; ypp. numerous, hamate, obtuse, to 180 + 20 μ	*echinus*	(727)
3201.4220	Cols. subdense; hyphae crooked; hc. ovate to angulose; appl numerous, bent, to 80 × 15 μ .	*echinus* var. *domingensis*	(728)
3201.4220	Cols. thin to subdense; hyphae straight; hc. entire; app. to 45 × 25 μ, obtuse, straight or bent; sp. fusoid	*tonkinensis*	(729)

3201.3220 Cols. thin; hyphae undulate; hc. entire; app. to 36 × 11 μ, tips bent; sp. oblong, obtuse ... *tonkinensis* var. *cecropiae* (730)

Irenopsis

3401.4220 Cols. thin; hyphae undulate; hc. entire or lobate; ps. to 160 × 9—10 μ ..... *benguetensis* (731)

Asteridiella

3101.5330 Cols. thin; hyphae straight; hc. entire; P-cells mammillate, to 30 μ hight ..... *fici* (732)

3101.5330 Cols. thin; hyphae straight; hc. lobate; P-cells conic-mammillate, to 30 μ high ..... *ugandensis* var. *antiaridis* (733)

3101.4220 Cols. thin; hyphae undulate; hc. piriform to angulose; P-cells conic, often bent, to 30 μ high ..... *ugandensis* (734)

3101.4220 Cols. thin; hyphae undulate to sinous; hc. globose, entire; P-cells conoid, to 25 μ high .. *reticulata* (735)

3101.4220 Cols. thin; hyphae substraight to undulate; hc. elongate, angulose to sublobate ..... *umirayebsis* (736)

3101.4220 Cols. thin; hyphae substraight; hc. large, angulose ..... *cecropiicola* (737)

3101.3220 Cols. subdense; hyphae undulate; hc. ovate to piriform ..... *olmediae* (738)

2101.5330 Cols. dense; hyphae straight; hc. lobate ..... *cheoi* (739)

Meliola

3423.4231 Cols. dense, velvety; hyphae undulate; hc. entire to lobate; ms. arcuate to uncinate, subacute ..... *brinkii* (730)

3421.5222 Cols. dense, velvety; hyphae straight; hc. globose, entire; ms. arcuate to coiled, acute .. *paratrophidis* (741)

3411.5332 Cols. thin to dense, velvety; hyphae substraight; hc. subglobose to lobate; ms. straight obtuse to clavulate ..... *artocarpiicola* (742)

3411.5222 Cols. dense, velvety; hyphae undulate; hc. entire or angulose; ms. straight, obtuse ..... *sakahensis* (743)

3411.52×2 Cols. thin; hyphae undulate to crooked; hc. lobate; ms. obtuse ..... *pseudomori* (744)

3411.4221 Cols. dense, velvety; hyphae straight or undulate; hc. entire or irregular; ms. acute ..... *microtricha* (745)

3133.4221 Cols. dense, velvety; hyphae straight; hc. small, subglobose, entire; ms. 3-4-cristate-dentate to 10 μ ..... *chlorophorae* (746)

31⅓1.4332 Cols. thin to subdense, thinly velvety; hyphae undulate; hc. oblong, entire; ms. subacute to dentate ..... *soroceae* (747)

3131.5322 Cols. dense, subcrustose; hyphae undulate; hc. clavate to angulose; ms. dentate to 10 μ, few or none ..... *soroceae* var. *africana* (748)

3121.5332 Cols. dense, velvety; hyphae substraight; hc. large, entire or angulose; ms. obtuse ..... *artocarpi* (749)

3121.5321	Cols. dense, velvety; hyphae substraight; hc. ovate, entire; ms. obtuse, arcuate to uncinate	*eriophora*	(750)
3111.6334	Cols. dense, velvety; hyphae straight to crooked; hc. ovate to angulose; ms. subacute	*fici-globosae*	(751)
3111.6334	Hyphae undulate to sinuous; hc. oblong-clavulate, entire; ms. acute	*soroceana*	(752)
3111.4333	Cols. subdense; hyphae straight; hc. entire; ms. acute	*ficium*	(753)
3111.4223	Cols. subdense; hyphae straight; hc. subglobose, entire; ms. acute	*ficium* var. *ugandensis*	(754)
		ugandensis	(754)
3111.4221	Cols. dense, velvety; hyphae straight to undulate; hc. entire; ms. acute	*bangalorensis*	(755)
3111.4221	Cols. dense; hyphae substraight; hc. narrow piriform, entire; ms. acute	*ficicola*	(756)
3111.3221	Cols. thin; hyphae undulate; hs. ovate, entire; ms. acute	*ovatipoda*	(757)
3131.4211	setae few	*soroceae* var. *fici*	(758)

(727) *Appendiculella echinus* (P. Henn.) Hoehn., Sitzb. K. Akad. Wiss. Wien, Mat.-naturw. Kl. **128**: 556. 1919.

= *Meliola echinus* P. Henn., Hedwigia **43**: 363. 1904.

= *Irene echinus* (P. Henn.) Stev., Ann. Mycol. **26**: 426. 1927.

Cols. hypophyllous, effuse, very thin, smooth. Hyphae flexuous to crooked, cells mostly 40—50 × 6—7 μ, branching opposite or irregular, acute to wide, very loosely interwoven-reticulate. Ch. alternate, crooked, spreading, 30—70 μ long; ste. bent to tortuous, cylindric, 0—2-septate, 10—50 μ long; hc. globose to calvate, entire or irregularly rounded-angulose, versiform, 12—20 × 11—18 μ. Mh. separate, few, opposite, ampulliform, 19—26 × 8—10 μ. P. scattered, to 280 μ diam., most surface cells prolonged into pale transparent brownish, thin-walled appendages, to 180 × 12—20 μ, tapering to obtuse, hamate apex, faintly striate, smooth, continuous. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—48 × 15—18 μ.

On *Coussapoa* sp., Brazil, Ule, Herb. brasil. 3134 (type), Ule, Mycoth. brasil. 57; — On *Cecropia* sp., British Guiana, Stevens 226, 237 (FLS).

(728) *Appendiculella echinus* (P. Henn.) Hoehn. var. *domingensis* Hansf., Sydowia **9**: 29. 1955.

Cols. hypophyllous, subdense, to 4 mm. diam. Hyphae tortuous, cells mostly 20—35 × 6—9 μ, branching opposite or irregular, acute, closely interwoven-reticulate. Ch. alternate, crooked, 18—40 μ long; ste. cylindric, often tortuous, 5—20 μ long; hc. rarely ovate and entire, usually irregularly rounded-angulose to lobate, 13—21 × 10—19 μ. Mh. mixed with ch., opposite or alternate, 12—30 × 6—8 μ, ampulliform. P. closely scattered, to 210 μ diam.; app. numerous, clear pale brown, thin-walled, continuous, obtuse, smooth or indi-

stinctly transverse-striate, to 80 × 15 µ, bent at apex. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—41 × 17—18 µ.

On *Cecropia peltata*. San Domingo, Ciferri, Mycofl. doming. exs. 261, type (K).

(729) *Appendiculella tonkinensis* (K. & R.) Toro, Mycologia 19: 71. 1927.

= *Meliola tonkinensis* Karst. & Roum., Rev. Mycol. 12: 77. 1890.

= *Irene tonkinensis* (K. & R.) Stev., Ann. Mycol. 25: 427. 1927.

Cols. amphigenous, on upper surface very thin, denser below,

Cols. amphigenous, on upper surface very thin, denser below, to 6 mm. diam. or confluent. Hyphae substraight, cells mostly 25—35 × 6—7 µ, branching opposite, acute, loosely reticulate. Ch. alternate, antrorse or spreading, 14—22 µ long; straight or bent; ste. cuneate to cylindric, 3—8 µ long; he. globose, entire, 10—15 × 9—12 µ. Mh. mixed with ch., ampulliform, mostly alternate, 15—22 × 7—8 µ. P. scattered, to 170 µ diam., most surface cells prolonged into dark brown, subtranslucent, transversely striate, obtuse, straight or bent appendages to 45 × 25 µ, tapering to 10 µ at apex. Sp. fusoid, ends attenuate-rounded, 4-septate, slightly constricted, 37—43 × 15—16 µ.

On *Ficus* sp., Tonkin, Roum., Fung. sel. exs. 5944, leg. Balansa, type (P).

On the lower surface the hyphae are crooked, and the ch. long-pedicellate.

(730) *Appendiculella tonkinensis* (K. & R.) Toro, var. **cecropiae** (Stev.) Hansf., comb. n. (3201.3220)

= *Irene tonkinensis* var. *cecropiae* Stev., Ann. Mycol. 25: 427. 1927.

Cols. epiphyllous, thin, to 10 mm. diam. Hyphae crooked to undulate, cells mostly 30—40 × 6—8 µ, branching opposite, at wide angles, loosely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 13—20 µ long; ste. cylindric, 3—8 µ long; he. globose, entire, 10—14 × 10—13 µ. Mh. mixed with ch., opposite, ampulliform, 15—24 × 7—8 µ. P. scattered, to 170 µ diam.; app. none to numerous, to 40 × 10—12 µ, clear pale brown, continuous, obtuse, bent at darker tip, smooth or trnansversely striate. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 32—36 × 14—15 µ.

On *Cecropia anachnoides*, Panama, Stevens 1016, type; — On *C. longifera*, Panama, Stevens 122, 972.

(731) *Irenopsis benguetensis* Stev. & Rold., Philipp. Journ. Sci., 56: 49. 1935.

Cols. amphigenous, thin, to 20 mm. diam. Hyphae sinuous to crooked, cells mostly 25—35 × 6—9 µ, branching alternate or irregular, wide, loosely reticulate. Ch. alternate, straight or bent, 22—37 µ long; ste. cuneate to cylindric, 6—20 µ long; he. subglobose to angulose or sublobate, 13—20 × 12—17 µ. Mh. separate, alternate, rarely

opposite, ampulliform, 19—25×7—10 μ. P. scattered, to 150 μ diam.; ps. 3—10, erect or spreading, dark brown, straight or bent at apex, not hamate or uncinate, obtuse, to 160×9—10 μ. 4—5-septate, surface dark-asperulate. Sp. cylindric, obtuse, 4-septate, constricted, 37—43×14—17 μ.

On *Ficus variegata*, Philippines, Stevens 1566, 1528, 1564; — On *F. ulmifolia*, Philippines, PBS 1462, 1947 (S); — On *F. manili*, Philippines, PBS 2962 (S); — On *F. rostrata*, Java, BO 12584; — On *F. quercifolia*, Java, BO 13377; — On *F. obscura*, Java, BO 12096, 12588; — On *F. leptocarpa*, Java, BO 12846 p. p.; — On *F.* sp., Philippines, PBS 2138 (S); China, Cheo 2784 (F).

(732) *Asteridiella fici* Hansf., Sydowia **10**: 48. 1957.

= *Irenina fici* Hansf., Journ. Linn. Soc. London **51**: 537. 1939.

Cols. epiphyllous, thin, to 3 mm. diam. Hyphae straight to sinuous or crooked, cells mostly 25—40×6—9 μ, branching opposite or alternate at wide angles, loosely reticulate. Ch. alternate, antrorse, straight or bent, 25—48 μ long; stc. cylindric to cuneate, straight or bent, 10—25 μ long; hc. globose to ovate or piriform, usually entire, 15—24×12—20 μ. Mh. numerous, mixed with ch., or sometimes separate, opposite or alternate, 19—25×7—10 μ, conoid to ampulliform. P. scattered, or rarely in a central group, to 240 μ diam., each with radiating hypopodiate hyphae around the base, surface cells mammillate, or with bent conoid processes, obtuse, to 30 μ high and to 40 μ wide at base. Sp. oblong to subellipsoid, obtuse, 4-septate, rather constricted, 48—60×19—25 μ.

On *Ficus* sp., Uganda, Hansford 2117, type; Sierra Leone, Deighton 1924.

(733) *Asteridiella ugandensis* (Hansf.) Hansf., var. *antiaridis* (Hansf. & Deight.) Hansf., Sydowia **10**: 51. 1957.

(3101.5330)

= *Irenina ugandensis* (Hansf.) Hansf. & Deight., var. *antiaridis* Hansf. & Deight., Mycol. Paper, IMI, **23**: 38. 1948.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae straight, cells mostly 25—40×7—9 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 25—40 μ long; stc. cylindric to cuneate, 9—16 μ long; hc. irregularly 2—4-lobate, 18—25×13—20 μ. Mh. mixed with ch. opposite or alternate, conoid to ampulliform, 18—23×6—10 μ. P. scattered, to 210 μ diam., surface cells conoid to mammillate, often curved at apex, obtuse, to 25 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 45—52×19—23 μ.

On *Antiaris africana*, Gold Coast, Deighton CB 949, type, Hughes in IMI 37719;

On *A. toxicaria*, Uganda, Hansford 3112, 3020, with spores to 55 μ long.

734) Asteridiella ugandensis Hansf., Sydowia **10**: 51. 1957. (3101.4220)

= *Irene ugandensis* Hansf., Proc. Linn. Soc. London **143**: 7. 1941.

= *Irenina ugandensis* (Hansf.) Hansf. & Deight., Mycol. Paper. IMI. **23**: 38. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. or numerous and confluent. Hyphae sinuous to crooked, cells mostly 30—40 × 6—8 µ, branching mostly alternate, rarely opposite, loosely reticulate. Ch. alternate or more scattered, antrorse or spreading, straight or bent, 27—48 µ long; ste. cylindric, straight or bent, 10—25 µ long; hc. clavate to oblong, entire, or sinuous-bent to slightly angulose, 15—24 × 9—14 µ, usually rounded at apex. Ma. separate, often numerous, alternate or opposite, conoid to ampulliform, 19—25 × 7—9 µ. P. scattered, each with radiating hypophysiate hyphae around the base, to 180 µ diam., surface cells mammillate or with bent conoid processes, obtuse, to 30 µ high, doubtfully transverse-striate towards apex. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—49 × 17—20 µ.

On *Ficus vreclaris*. Uganda. Hansford 2411 (type). 3040, 3306, 3259.

On *F. exasperata*. Sierra Leone. Deighton 1883.

735) *Asteridiella reticulata* (K. & R.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola reticulata* Karst. & Roum., Rev. Mycol. **12**: 78. 1890.

= *Irenina reticulata* (K. & R.) Stev., Ann. Mycol. **25**: 456. 1927.

Cols. epiphyllous, thin to dense, to 2 mm. diam. or confluent. Hyphae sinuous to undulate, cells mostly 20—30 × 6—8 µ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, spreading, straight or slightly bent, 13—20 µ long; ste. cylindric, 3—7 µ long; hc. globose to ovate, entire, 10—15 × 9—13 µ. Ma. mixed with ch., alternate, ampulliform to conoid, 18—25 × 8—10 µ. P. scattered, to 150 µ diam., surface cells conoid, to 22 µ high, the apices obtuse, straight or bent. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—48 × 18—20 µ.

On *Ficus* sp., Tonkin. Balansa 25, type; — On *F. rostrata*, Java, BO 12584; — On *F.* sp., Uganda. Hansford 1409, p. p.

736) *Asteridiella umirayensis* (Yates) Hansf., Sydowia **10**: 51. 1957.

= *Meliola umirayensis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 370. 1918.

= *Irenina umirayensis* (Yates) Hansf., Proc. Linn. Soc. London **157**: 170. 1946.

= *Irenina bakeriana* Hansf., loc. cit. **157**: 169. 1946.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., thin. Hyphae straight to undulate, cells mostly 25—40 × 6—8 µ, branching alternate or irregular, nor opposite, acute, loosely reticulate. Ch.

alternate, antrorse or spreading, straight or bent, 20—40 μ long; ste. cylindric to cuneate, 6—20 μ long, usually straight; he. rarely entire and subglobose, usually sinuous-bent to irregularly rounded-angulose or sublobate, sometimes triangular, 13—25×10—18 μ. Mh. few, mixed with ch., alternate, ampulliform, 15—25×6—10 μ. P. scattered, to 180 μ diam., surface cells rounded to obtusely conoid, projecting to 15 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—45×14—16 μ.

On *Ficus* sp., Philippines, PBS 29081 (type), 1561 (S); — On *F. nota*, Philippines, PBS 869 (S); — On *F. odorata*, Philippines, PBS 2867 (S); — On *F. urophylla*, Singapore, Baker, Fung. malay 455; — On *F. obscura*, Java, BO 13381; — On *F. lepicarpa*, Java, BO 12846 p. p.

(737) *Asteridiella cecropiicola* Hansf., Sydowia **10**: 47. 1957.

— *Irene cecropiicola* Hansf., Sydowia **9**: 33. 1955.

Cols. epiphyllous, very thin, to 5 mm. diam. or confluent. Hyphae substraight, cells mostly 25—40×7—9 μ, branching usually opposite, acute, loosely reticulate. Ch. alternate, more or less antrorse, straight or bent, 23—35 μ long; ste. cylindric to cuneate, 6—15 μ long; he. subglobose to widely piriform, more or less crenulate to angulose, not entire, 15—23×14—20 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, ampulliform, 17—25×8—10 μ. P. scattered, to 180 μ diam., surface cells obtuse conoid to mammillate, to 18 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—45×17—19 μ.

On *Cecropia* sp., Brazil, Ule, Herb. brasil. 2411, type (K, S).

This was recorded by Rehm (1901) and by Theissen (1910) as *Meliola obesa* Speg.

(738) *Asteridiella olmediae* Hansf., Sydowia **11**: 48. 1958.

Cols. amphigenous, to 1 mm. diam., or numerous and confluent, subdense, smooth. Hyphae undulate (or crooked on lower surface), branching opposite at wide angles, closely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse or spreading, straight or bent, 19—25 μ long; ste. cylindric to cuneate, 3—9 μ long; he. ovate to piriform, entire or slightly rounded-angulose, 13—17×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ. P. scattered, globose, rough, to 170 μ diam., surface cells obtuse conoid, bent, to 18 μ high. Sp. subellipssoid, obtuse, 4-septate, constricted, 31—37×13—15 μ.

On *Olmedia aspera*, Panama, Stevens 1068 (type), 1065 (FLS).

(739) *Asteridiella chevi* Hansf., Sydowia **10**: 47. 1957.

— *Irenina chevi* Hansf., Farlowia **3**: 272. 1948.

Cols. amphigenous, dense to 4 mm. diam. or confluent. Hyphae straight, cells mostly 20—30×7—9 μ, branching opposite, close, acute, densely reticulate and almost solid. Ch. alternate, antrorse,

straight or bent, 17—37 μ long; ste. cylindric or cuneate, 4—17 μ long; he. irregularly and coldly stellate-lobate, versiform, 10—22 × 12—21 μ. Mh. few, mixed with ch., alternate, ampulliform, 14—20 × 7—9 μ. P. scattered, to 290 μ diam., surface cells mammillate, or with bent conoid processes to 40 μ high. Sp. bent ellipsoid, obtuse, 3-septate, slightly constricted, 48—56 × 20—22 μ, central cells larger than and cells.

On *Ficus* sp., China, Cheo 715, type (F).

(740) *Meliola brinkii* Hansf., Reinwardtia **3**: 96. 1954.

Cols. dense, velvety, to 5 mm. long, on upper surface of leaf base and sometimes caulicolous, rarely on lower surface of leaf veins. Hyphae substraight to undulate, cells mostly 20—30 × 6—7 μ, branching alternate or irregular, acute, closely interwoven-reticulate. Ch. alternate or about 2% opposite, spreading, straight or bent, 20—35 μ long; ste. cylindric, 6—20 μ long; he. sometimes globose and entire, usually irregularly sinuous-lobate or even rather deeply 2—3-lobate, 12—18 × 10—16 μ. Mh. very few, mixed with ch., alternate, ampulliform, 15—20 × 7—10 μ. Ms. very numerous scattered, simple, subacute, broadly arcuate to uncinate in upper half, to 280 × 9—11 μ. P. scattered, verrucose, to 210 μ diam., the upper half with 0—8 spreading-erect setae to 200 μ long, simple, obtuse or acute, the apex often bent like those on mycelium, 8—10 μ thick below. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted 38—47 × 14—17 μ.

On *Artocarpus glauca*, Java, BO 12315, type.

(741) *Meliola paratrophidis* Hansf., Reinwardtia **3**: 96. 1954.

Cols. mostly hypophyllous, to 5 mm. diam. or confluent, dense, velvety. Hyphae substraight to slightly flexuous, cells mostly 30—40 × 8—9 μ, branching alternate or irregular at acute angles, loosely to rather closely reticulate. Ch. alternate, spreading or antrorse usually straight or slightly bent, 23—30 μ long; ste. cylindric to cuneate, 5—13 μ long; he. globose to clavate, sometimes bent and slightly angulose, 13—19 × 13—16 μ. Mh. few, separate, opposite or alternate, ampulliform, 20—28 × 6—8 μ. Ms. numerous, simple, acute, widely arcuate to coiled in upper half, to 350 × 7—9 μ. P. scattered, verrucose, to 180 μ diam., each with 10—16 erect-spreading setae on upper half, to 200 × 7—9 μ, simple, acute, uncinate to nearly straight. Sp. oblong, obtuse, 4-septate, constricted, 46—53 × 15—17 × 13—15 μ.

On *Paratrophis glabra*, North Borneo, Clemens 29321, type (BO).

(742) *Meliola artocarpiicola* Stev. ex Hansf., Sydowia **11**: 52. 1958.

Cols. amphigenous, thin to dense, to 5 mm. diam. or confluent, shortly velvety. Hyphae substraight, branching alternate or irregular at acute angles, becoming closely interwoven-reticulate, cells mostly 35—60 × 7—9 μ. Ch. alternate or more scattered, antrorse or spreading, straight or bent, 30—45 μ long; ste. cuneate to cylindric, 8—15 μ long; he. subglobose, piriform, or irregular ans shallowly lobate, 20—34 ×

18—25 μ. Mh. mostly separate, alternate or opposite, conoid to ampulliform, 20—28×7—9 μ. Ms. scattered and grouped around P., straight or slightly bent, simple, obtuse to clavulate, to 330×8—9 μ, enlarged up to 13 μ at apex. P. scattered, verrucose, to 230 μ diam.; ps. 4—12, radiating-erect, straight, simple, obtuse to clavulate, septate, dark brown, smooth, to 200×7—9 μ. Sp. oblong, obtuse, 4-septate, constricted, 48—56×19—22 μ.

On *Artocarpus* sp., Philippines, PBS 36433 (type), 36498, 35861, 24617 (FLS).

(743) *Meliola sakahensis* Yamam., Trans. Nat. Hist. Soc. Formosa **30**: 421. 1940.

Cols. hypophyllous, subdense, velvety, to 4 mm. diam. or confluent. Hyphae undulate to crooked, branching alternate at wide angles, becoming densely interwoven-reticulate, cells 16—37×7—8 μ. Ch. alternate, spreading, straight or bent, 20—35 μ long; ste. cylindric to cuneate, 8—22 μ long; he. subglobose to ovate, entire or rounded-angulose to sublobate, 11—19×9—16 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—35×8—9 μ. Ms. numerous, scattered and grouped around P., straight or slightly bent, simple, obtuse, to 450×8—10 μ, gradually attenuate to apex 2—3 μ wide. P. scattered, verrucose, to 200 μ diam.; ps. 10—35 from upper half, erect-spreading, straight or slightly bent, simple, obtuse, 80—130×6—9 μ, gradually attenuate to apex. Sp. fusoid with attenuate-rounded ends, 4-septate, constricted, 43—52×15—18×15 μ.

On *Ficus foveolata* var. *arisanensis*, Formosa, Yamamoto, type (USDA).

(744) *Meliola pseudomori* Hansf., Proc. Linn. Soc. N. S. W., **78**: 65. 1954.

Cols. hypophyllous, thin, to 2 mm. diam. Hyphae undulate to crooked, cells mostly 25—40×7—8 μ, branching alternate or irregular, not opposite, at varying angles, loosely reticulate. Ch. alternate or more scattered, usually irregularly bent, 30—60 μ long; ste. cylindric, 12—35 μ long; often bent; he. very irregularly and deeply lobate, versiform, 18—30×15—25 μ. Mh. mostly separate, opposite or alternate, ampulliform, 18—22×7—9 μ. Ms. thinly scattered, and grouped around P., erect, straight or slightly bent, simple, obtuse, to 350×8—10 μ, gradually attenuate upwards. P. loosely scattered, black, globose, verrucose, immature, but bearing 0—4 setae on upper half; ps. obtuse, continuous, to 60×8 μ, apex sometimes bent but not uncinate, surface minutely dark-granulose. Sp. oblong obtuse, obtuse, 4-septate, constricted, 48—54×17—18 μ.

On *Pseudomorus pendulina* var. *australiana*, New South Wales, 1897, leg. Maiden, type.

(745) *Meliola microtricha* Syd., Ann. Mycol. **18**: 157. 1920.

Cols. epiphyllous, dense, to 3 mm. diam. or confluent, subvelvety.

Hyphae substraight to undulate, branching alternate or irregular, acute to wide, closely reticulate, cells mostly 15—22 × 8—9 μ. Ch. alternate, subantrorse or spreading, straight or slightly bent, 20—28 μ long; ste. cuneate, 4—9 μ long; he. subglobose, entire or angulose to sublobate, 13—21 × 14—19 μ. Mh. mixed with ch., alternate, ampulliform, 18—24 × 8—10 μ. Ms. few to numerous, more or less straight, scattered and grouped around P., to 400 × 8—9 μ, simple, acute to subacute. P. subaggregate, verrucose, to 190 μ diam.; ps. 0—6, subereet, straight, brown, to 90 × 8 μ, gradually attenuate to paler, subacute or obtuse apex, continuous, smooth. Sp. oblong, obtuse, 4-septate, constricted, 37—47 × 15—18 μ.

On *Ficus alba*, Singapore, Baker, Fungi malay 490, type (not seen by present author); — On *F. formosana*, Formosa, Yamamoto (USDA).

(746) *Meliola chlorophorae* Hansf., Proc. Linn. Soc. London **157**: 175. 1946.

Cols. epiphyllous, rather dense, velvety, to 8 mm. diam. Hyphae straight or undulate, cells mostly 20—40 × 6—8 μ, branching opposite, acute, closely reticulate. Ch. alternate or to 20% opposite, spreading, 11—18 μ long; usually straight; ste. cylindric, 3—6 μ long; he. globose to widely piriform, entire, 8—14 × 8—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—19 × 6—7 μ. Ms. numerous, scattered, straight, to 260 × 6—9 μ, apex 2—4-dentate-cristate to 10 μ. P. scattered, verrucose, to 180 μ diam. (in West African collections to 300 μ diam.). Sp. oblong, obtuse, 4-septate, constricted slightly, 34—44 × 13—16 μ.

On *Chlorophora excelsa*, Uganda, Hansford 2824 (type), 3147, 3533; Sierra Leone, Deighton 554, 1386, 1811, 1850, 2367; Congo Belge, Vanderyst 17121.

(747) *Melioïa soroceae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 1343. 1912.

Cols. hypophyllous, to 5 mm. diam., thin to subdense, thinly velvety. Hyphae substraight to undulate, branching opposite or irregular, acute to wide, loosely to subdensely reticulate, cells mostly 20—30 × 6—7 μ. Ch. alternate, antrorse or spreading, often bent, 20—27 μ long; ste. cylindric to cuneate, 3—7 μ long; he. cylindric, often bent, entire, 15—21 × 8—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 17—22 × 6—7 μ. Ms. scattered and grouped around P., straight or slightly bent, to 350 × 8—9 μ, apex rarely simple and subacute, usually scabrid, dentate, or with short dentate branches, teeth to 18 μ long. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—40 × 20—23 μ.

On *Sorocea ilicifolia*, Argentina, Venturi in SPEG 506, type; SPEG 537.

(748) *Meliola soroceae* Speg. var. *africana* Hansf., Sydowia **10**: 90. 1957.

Cols. amphigenous, mostly hypophyllous, to 2 mm. diam., dense, subcrustose. Hyphae substraight to slightly undulate, branching mostly opposite at wide angles, densely reticulate, cells mostly 10—20×8—10 μ. Ch. alternate, subantrorse or spreading, straight or slightly bent, 22—35 μ long; stc. cylindric to cuneate, 5—15 μ long; hc. clavate, entire or slightly angulose above, 15—21×9—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×8—10 μ. Ms. few to numerous (sometimes none), scattered, straight, to 320×9—10 μ, apex irregularly dentate to 10 μ. P. scattered, verrucose, to 200 μ diam., sometimes with mycelial setae arising from the dense radiate subiculum. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 46—56×19—24 μ.

On *Bosquiea phoberos*, Uganda, Hansford 1912 (type), 2893, 2972, 3124, 3150, 3440, 3561; Congo Belge, Vanderyst 32464, 32489, 32491, 40197.

On *B. angolensis*, Gold Coast, Hughes in IMI 46753, 46756.

Many colonies in the Uganda collections show no ms., and could therefore be mistaken for *Asteridiella*.

(749) *Melioïa artocarpi* Yates, Philipp. Journ. Sci., C. Botany, **12**: 362. 1917.

Cols. epiphyllous, 3—5 mm. diam., thin, thinly velvety. Hyphae substraight, cells mostly 30—50×7—9 μ, branching alternate or irregular, acute, loosely reticulate. Ch. alternate or more scattered, antrorse or spreading, straight or slightly bent, 28—40 μ long; stc. cuneate, 10—15 μ long; hc. subglobose, oblong or clavate, entire or slightly rounded-angulose, 17—28×11—19 μ. Mh. mixed with ch., few, alternate, ampulliform, 23—30×9—12 μ. Ms. numerous, simple, acute or obtuse, arcuate to uncinate above, 350—500×9—11 μ, gradually attenuate to apex. P. numerous, scattered, to 200 μ diam., verrucose. Sp. oblong, obtuse, 4-septate, constricted, 50—55×18—25 μ.

On *Artocarpus* sp., Philippines, PBS 24692, type; Malaya, King 2595 (K).

(750) *Meliola eriophora* Speg., Anal. Soc. Cienc. Argentina **26**: 62. 1888.

Cols. epiphyllous, to 5 mm. diam. or confluent, dense, velvety. Hyphae substraight, branching opposite. acute, densely reticulate, cells mostly 18—25×9—11 μ. Ch. alternate, straight, 24—33 μ long; stc. cuneate, 5—12 μ long; hc. ovate to clavulate, entire, 16—33×11—15 μ. Mh. separate, alternate or opposite, ampulliform, 16—22×7—9 μ. Ms. numerous, scattered, to 300×10—12 μ, arcuate to broadly uncinate, obtuse. P. scattered, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 49—57×20—23×16—18 μ.

On *Ficus ipaboy-parodi*, Paraguay, Balansa s. n. in SPEG 735, type.

On the packet containing the type specimen, the host determination is cancelled, presumably as a mis-determination, but no substitute has been made.

(751) *Meliola fici-globosae* Hansf., Reinwardtia **3**: 95. 1954.

Cols. hypophyllous, dense, velvety, to 5 mm. diam. Hyphae substraight to sinuous or coroked, cells mostly 20—30×8—9 μ, branching opposite or irregular at wide angles, closely interwoven-reticulate. Ch. alternate, often bent, 23—33 μ long; stc. cylindric to cuneate, 6—14 μ long; hc. ovate to oblong or shallowly rounded-angulose above, often bent, 16—23×10—13 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 25—33×8—10 μ. Ms. numerous, scattered, straight, simple, subacute, to 1100×10—11 μ, gradually attenuate upwards. P. scattered, verrucose, to 250 μ diam., surface cells bent conoid, projecting to 20 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 55—60×21—24×17—19 μ.

On *Ficus globosa*, Java. BO 14506, type.

(752) *Meliola soroceana* Batista, Anal. IV Congr. Soc. Bot. Brazil, p. 112. 1953.

Cols. amphigenous, to 15 mm. diam. Hyphae undulate to sinuous, 6—8 μ thick, branching opposite at wide angles, loosely reticulate. Ch. alternate or unilateral, straight or bent, spreading or subantrorse; stc. cuneate to cylindric, 4—9 μ long; hc. oblong to clavulate, entire, 12—22×9—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—32×8—13 μ. Ms. straight or slightly bent, simple, acute, to 1050×7.5—12 μ, grouped around P. P. scattered, verrucose, to 325 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—62×16—24 μ.

On *Sorocea ilicifolia*, Brazil, Pontes in Herb. Inst. Pesq. Agron. Pernambuco 2571, type (not seen by present writer).

(753) *Meliola ficium* Yates, Philipp. Journ. Sci., C. Botany, **13**: 368. 1918.

Cols. epiphyllous, thin to subdense, slightly velvety, to 3 mm. diam or confluent. Hyphae substraight, cells mostly 15—30×6—7 μ, branching opposite, acute or wide, becoming closely reticulate in centre. Ch. alternate, usually straight, spreading, 13—20 μ long; stc. cylindric, 3—5 μ long; hc. ovate to piriform, entire, 10—15×7—12 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 16—24×7—9 μ. Ms. grouped around P., straight, simple, acute, to 800×10—12 μ. P. loosely scattered, verrucose, to 230 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 43—49×18—23×15—18 μ.

On *Ficus* sp., Philippines, PBS 28002 (type), 2670.

(754) *Meliola ficium* Yates var. *ugandensis* Hansf., Sydowia **10**: 72. 1957.

Cols. amphigenous, rather dense, to 3 mm. diam. Hyphae straight, cells mostly 15—40×7—8 μ, branching opposite, acute, becoming closely reticulate in centre. Ch. alternate, straight or bent, antrorse or spreading, 22—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. globose to wide piriform, entire, sometimes bent, 14—19×11—15 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform. Ms. thinly scattered and grouped around P., straight, simple, acute, to 600×12—13 μ, attenuate gradually to apex. P. in central group, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 41—49×15—17×12—14 μ.

On *Ficus* sp., Uganda, Hansford 1409, type.

(755) *Meliola bangalorensis* Hansf. & Thirum., Farlowia **3**: 290. 1948.

Cols. amphigenous, dense, velvety, to 5 mm. diam. or on upper surface numerous and widely confluent. Hyphae substraight to crooked, cells mostly 15—40×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or very rarely opposite, straight or bent, spreading or antrorse, 15—23 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. subglobose to clavate, straight or bent, entire or on lower surface often irregularly angulose to shallowly 2—3-lobate, 10—16×10—15 μ. Mh. fairly numerous, separate, opposite, alternate or ternate, ampulliform, 15—20×7—9 μ. Ms. numerous, closely scattered and grouped around P., straight, simple, acute, to 260×8—10 μ. P. subaggregate, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—40×13—15 μ.

On *Ficus* sp., India, Thirumalachar 884, type.

(756) *Meliola ficicola* Hansf. & Thirum., Farlowia **3**: 293. 1948.

Cols. epiphyllous, subdense, to 3 mm. diam. or confluent. Hyphae straight, cells mostly 15—25×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, usually straight, 16—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric or slightly clavate, entire, 12—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×7—10 μ. Ms. thinly scattered, and grouped around P., straight, simple, acute, to 240×7—9 μ. P. loosely scattered, each on radiate subiculum, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×16—18 μ.

On *Ficus* sp., India, Thirumalachar 894 p. p., type.

(757) *Meliola ovatipoda* Hansf. & Thirum., Farlowia **3**: 297. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 15—20×6 μ, branching opposite, at wide angles, loosely reticulate. Ch. alternate, subantrorse, usually straight, 17—29 μ long; stc. cylindric to cuneate, 4—15 μ long; hc.

ovate, entire, 10—16×9—12 μ. Mh. separate, opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. grouped around P., few, substraight or irregularly bent, not uncinate, simple, acute, to 200×8—9 μ. P. scattered, each on radiate subiculum, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—37×13—16 μ.

On *Ficus* sp., India, Thirumalachar 894 p. p., type.

(758) *Meliola soroceae* Speg. var. *fici* Cif., Mycopathologia 7: 186. 1954.

Differs from type: Cols. amphigenous, 10—30 mm. diam., or hypophyllous, not membranaceous rarely setose; P. smaller, to 100 μ diam. (? immature); spores also smaller, 42—46×16—18 μ.

On *Ficus rubicosta*, San Domingo, Ekman 3330, type (not seen by present author).

Host Family 169. Urticaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis			
3401.4220	Cols. thin; hyphae substraight to undulate; hc. ovate to clavate or angulose; ps. 4—12, obtuse, to 110 μ	*oreocnidae*	(759)
Asteridiella			
3101.5320	Cols. thin; hyphae undulate; hc. large, ovate to lobate; P-cells obtuse conoid, to 20 μ high	*villebruneae*	(760)
3101.4230	Cols. dense; hyphae straight; hc. lobate; P-cells conoid, to 30 μ high	*pileae*	(761)
3101.4220	Cols. subdense; hyphae undulate; hc. lobate; P-cells conoid, to 12 μ high	*pipturi*	(762)
3101.4220	Cols. thin; hyphae undulate to crooked; hc. subglobose to angulose; P-cells rounded to conoid, to 15 μ high	*leucosykeae*	(763)
Meliola			
3111.3221	Cols. thin; hyphae undulate to sinuous; hc. globose-clavate, entire; ms. acute	*earlii*	(764)
3111.3221	Cols. dense; hyphae very crooked; hc. 2-4-lobate; ms. acute or obtuse	*thomasiana*	(765)
3111.3221	Cols. thin; hyphae undulate to crooked; hc. ovate; ms. obtuse	*achudemiae*	(766)

(759) *Irenopsis oreocnidae* Hansf., Sydowia **11**: 46. 1958.

Cols. epiphyllous, thin, smooth. Hyphae substraight to undulate, branching alternate or irregular, acute, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 23—22 μ long; stc. cuneate, 7—12 μ long; hc. ovate to clavate, entire or angulose 15—21×11—15 μ. Mh. separate, mostly alternate, ampulliform, 18—25×8—10 μ. P. scattered, slightly verrucose, to 160 μ diam.; ps. 4—12, straight or slightly bent, dark brown, continuous, smooth, obtuse, to 110×

9—11 μ, wall 2—2.5 μ thick. Sp. oblong, obtuse, 4-septate, constricted, 39—45×15—17 μ.

On Oreocnida sp., Philippines, Stevens 1204, type. (FLS).

(760) *Asteridiella villebruneae* Hansf., Sydowia **10**: 51. 1957.
= *Irenina villebrunneae* Hansf., Reinwardtia **3**: 108. 1954.

Cols. epiphyllous, thin, to 4 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 20—40×6—7 μ, branching opposite or irregular at varying angles, loosely reticulate. Ch. alternate or more scattered, antrorse or spreading, straight or bent, 20—35 μ long; stc. cylindric to cuneate, 8—16 μ long; hc. subglobose or ovate and entire, to irregularly rounded-angulose or lobate, 18—25× 12—20 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—25×8—10 μ. P. loosely scattered, verrucose, to 160 μ diam., surface cells obtuse conoid, to 20 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 43—51×17—21×15—16 μ.

On *Villebrunea scabra*, Java, BO 13318, type; — On *Myriocarpa longipes*, Panama, Stevens 1069 (FLS).

(761) *Asteridiella pileae* Hansf., Sydowia **10**: 49. 1957.
= *Irenina pileae* Hansf., Proc. Linn. Soc. London 160: 125. 1948.

Cols. epiphyllous, dense, to 1 mm. diam. Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading, straight or slightly bent, 20—30 μ long; stc. cylindric or cuneate, 5—8 μ long; hc. rarely clavate and entire, mostly irregularly angulose to 2—5-lobate, 14—24× 11—16 μ. Mh. mixed with ch., few, alternate, ampulliform to conoid, 14—20×7—8 μ. P. loosely scattered, to 230 μ diam., surface cells bluntly conoid, or prolonged into bent, obtuse conoid processes to 30 μ high, and to diam. at base. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—45×14—17 μ, the middle cell often slightly the largest.

On *Pilea parietaria*, Porto Rico, Stevens 7232 (type), 1038, 7804, Heller 558 p. p.; San Domingo, Ciferri, Mycofl. doming. exs. 185, Ekman 3083.

(762) *Asteridiella pipturi* Hansf., Sydowia **10**: 49. 1957.
= *Irenina pipturi* Hansf., Proc. Linn. Soc. London 160: 125. 1948.

Cols. epiphyllous, to 1 mm. diam., subdense. Hyphae substraight to undulate, cells mostly 15—20×7 μ, branching opposite or alternate, at wide angles, rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 20—27 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. broadly triangular, usually with 3 shallow rounded lobes, 14—18×11—19 μ. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. in central group, verrucose, to 140 μ diam., surface cells rounded to conoid, to

12 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—43× 17—19 μ.

On *Pipturus arborescens*, Philippines, PBS 17634 p. p. (type); — On *P. albidus*, Hawaii, Stevens 1020, 713. 608, 760, 982, 766, 661, 752 (FLS).

(763) *Asteridiella leucosykeae* (Yates) Hansf., Sydowia **10**: 49. 1957.

= *Meliola leucosykeae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 369. 1917.

= *Irenina leucosykeae* (Yates) Hansf., Proc. Linn. Soc. London, **157**: 170. 1946.

Cols. epiphyllous, to 8 mm. diam., thin, smooth. Hyphae undulate to flexuous, cells mostly 25—30×7—8 μ, branching opposite or irregular, wide, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 17—24 μ long; stc. cuneate, 4—9 μ long; hc. broadly clavate to subglobose, sometimes rounded-angulose, 11—17×10—19 μ. Mh. mixed with ch., few, ampulliform, 10 —15×5—7 μ, mostly alternate. P. scattered, verrucose, to 260 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—40×14—16 μ.

On *Leucosyke capitellata*, Philippines, PBS 24621, type. (P, S. F).

(764) *Meliola earlii* Stev., Illinois Biol. Monogr. 2: 47. 1916.

Cols. amphigenous, to 4 mm. diam., rather thin, almost smooth. Hyphae substraight to undulate or inuous, cells mostly 15—25×7 μ, branching opposite at wide angles, rather closely reticulate. Ch. alternate, spreading, straight or slightly bent 11—17 μ long; stc. cylindric to cuneate 2—7 μ long; hc. globose to bent clavate, entire or rarely slightly angulose, 9—12×8—13 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform. Ms. few to numerous, straight, simple acute to 220×7—8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 28—33× 11—12 μ.

On *Pilea parietaria*, Porto Rico, Stevens 7685 (type), 7804, Heller 558 p. p.; — On *P. nummularifolia*, Porto Rico, Stevens 5640.

(765) *Meliola thomasiana* Sacc., Bull. Soc. Broteriana **21**: 4. 1904.

Cols. thin to dense, epiphyllous, to 1 mm. diam. Hyphae crooked to undulate, branching alternate or irregular, acute, closely reticulate, cells mostly 15—20×5—8 μ. Ch. alternate, antrorse, straight or bent, 19—28 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. subglobose to clavate, rarely entire, usually rounded angulose to 2—4-lobate, often bent, 12—20×9—15 μ. Mh. mixed with ch., mostly alternate, conoid to ampulliform, 18—24×7—9 μ. Ms. numerous, scaterred, straight, simple, acute, to 340×8—9 μ. P. scattered, verrucose, to 200 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 33—37× 14—15 μ.

On *Elatostema*, sp., San Thome, Moller, type (FLS).

(766) *Meliola achudemiae* Hansf., Reinwardtia **3**: 108. 1954.

Cols. amphigenous, thin, to 2 mm. diam. or sometimes confluent. Hyphae flexuous to crooked, cells mostly 20—40×5—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate, antrorse or spreading, usually straight, 14—22 μ long; stc. cylindric or cuneate, 4—8 μ long; hc. ovate, entire, 11—18×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform 13—21×7—9 μ. Ms. thinly scattered straight or flexuous simple obtuse to 270×7—9 μ. P. in loose central group verrucose to 150 μ diam. Sp. ellipsoid, obtuse, 4-septate, 28—34×11—13 μ.

On *Achudemia javanica*, Java. BO 12550, type.

Host Family 171. Aquifoliaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4220	Cols. thin; hyphae straight or undulate; hc. angulose to lobate; ps. 3—10, obtuse, o 150 μ	*maricaensis*	(767)
3301.4230	Cols. thin; hyphae substraight to sinuous; hc. piriform, crenate to sublobate; ps. 2—8, obtuse, uncinate to tortuous, to 100 μ	*verzae*	(768)

Meliola

2111.6322	Cols. dense, velvety; hyphae straight to undulate; hc. large, entire or angulose; ms. subacute	*triseptata*	(769)
2111.5322	Cols. subdense; hyphae undulate; hc. 2-5-lobate; ms. acute	*knysnae*	(770)
21 .	.....	*ilicis*	(771)
21½1.6343	Cols. dense, velvety; hyphae substraight; hc. subglobose, angulose, large; ms. straight or arcuate-circinate, obtuse	*ilicicola* .	(772)
3123.4222	Cols. subcrustose, velvety; hyphae substraight to undulate; hc. globose to oblong, entire; ms. arcuate to uncinate, acute	*khasiensis*	(773)
3111.4322	Cols. dense, velvety; hyphae straight to undulate; hc. clavate, or angulose; ms. straight, attenuate-obtuse	*ciferriii*	(774)

(767) *Irenopsis maricaensis* (Stev.) Stev., Ann. Mycol. **25**: 434. 1927.

= *Meliola macricaensis* Stev. Illinois Biol. Monogr. **2**: 31. 1916.

Cols. hypophyllous very thin scarcely visible to 15 mm. diam. or confluent. Hyphae substraight or slightly undulate cells mostly 20—40×6—7 μ. branching opposite or irregular at wide angles, very loosely reticulate. Ch. alternate or more scattered, spreading, straight or bent, 18—30 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. sometimes clavate and entire, usually rounded-angulose to sublobate, straight or bent, 13—22×11—17 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 15—18×7—9 μ. P. loosely

scattered, to 170 μ diam., surface cells rounded-conical; ps. 3—10, to 150×7 μ, bent to loosely coiled at apex, obtuse, smooth, thick-walled (2—3 μ), 100—150×7 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 37—42×19—20 μ. (Stevens, to 48 μ long).

On *Ilex nitida*, Porto Rico, Stevens 3679 (type), 824, 3607 (FLS).

Further collections of this. and especially of *I. yerbae*, are needed to elucidate the differences between them, or whether Stevens' species should be reduced to a variety of Spegazzini's.

(768) **Irenopsis yerbae** (Speg.) Hansf., comb. n.

= *Meliola yerbae* Speg., Anal. Mus. Nac. Buenos Aires, **10**: 115. 1909.

Cols. amphigenous, thin, smooth, to 8 mm. diam. Hyphae substraight to sinuous, branching opposite or irregular, at wide angles, loosely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate, spreading or subantrorse, straight or bent, 20—25 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. irregularly piriform, margin crenate to sublobate, often bent, 14—19×12—16 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 20—30×7—8 μ, neck elongate. P. scattered, verrucose, to 280 μ diam.; ps. 2—8, simple, uncinate to irregularly tortuous at apex, obtuse, smooth, continuous to 100×7—8 μ, thin-walled (1 μ). Sp. subellipsoid, obtuse, 4-septate, constricted, 42—50×18—22×16—18 μ.

On *Ilex paraguayensis*, Argentina, SPEG 504, type.

(769) *Meliola triseptata* B. & Br. ex Cesati, Atti d. R. Accad. Sci. Fis. et. Math., **8**: 4: 25. 1878.

Cols. epiphyllous, velvety, dense, to 4 mm. diam., rarely confluent. Hyphae substraight to undulate, cells mostly 25—35×8—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 22—32 μ long; stc. cylindric to cuneate, 7—11 μ long; hc. subglobose and entire, to irregularly 3—4-rounded-angulose, 15—20×15—18 μ. Mh. rare, mixed with ch., opposite or alternate, ampulliform, 20—30×7—9 μ, neck elongate. Ms. numerous. scattered and also grouped around P., straight or curved in lower half, not uncinate, simple, subacute when fully mature, to 350×7—8 μ. P. scattered, verrucose, to 180 μ diam., each on a radiate subiculum. Sp. bent fusoid, ends obtusely attenuate-rounded, 3-septate, slightly constricted, 55—63×19—22 μ.

On *Ilex zeylanica*, Ceylon, ? leg. Thwaites, type (K, S ex Berkeley).

(770) *Meliola knysnae* Doidge, Bothalia **4**: 850. 1948.

Cols. amphigenous, to 3 mm. diam. or confluent, thin. Hyphae substraight to undulate, cells mostly 17—23×7—9 μ, branching alternate or irregular, acute, loosely reticulate. Ch. alternate, straight or bent, slightly antrorse, 25—38 μ long; stc. cuneate to cylindric, 6—12 μ long; hc. versiform, irregularly 2—5-lobate, often bent,

17—27×13—20 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 21—28×7—8 μ. Ms. scattered, simple, straight or somewhat flexuous above, not uncinate, to 500×7—9 μ, apex acute, sometimes slightly torulose. P. scattered, verrucose, to 150 μ diam. (? immature). Sp. ellipsoid to oblong, often bent, 3-septate, constricted, 50—58×17—23 μ.

On *Ilex mitis*, South Africa, PRET 17210-a (type), 34289.

(771) *Meliola ilicis* P. Henn., Englers Bot. Jahrb. **17**: 523. 1893.

This species is known to the writer only from the original description:

Cols. epiphyllous, dense, subcrustose, to 2 mm. diam. Hyphae dark brown, ramose, 10—14 μ thick. P. globose, granulose, to 200 μ diam. Sp. mostly 3-sptate, cylindric, obtuse, constricted, 50—65× 18—21 μ.

On *Ilex chamaedrifolia*, Brazil, Regnell 835, 119.

(772) *Meliola ilicicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **30**: 420. 1940.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 5 mm. diam. Hyphae straight to undulate, cells 16—37×8—9 μ, branching opposite or irregular, closely reticulate. Ch. alternate, 24—38 μ long; straight or slightly bent, spreading or antrorse; stc. cylindric to cuneate, 7—16 μ long; hc. subglobose to irregular, rounded-angulose to lobate, 16—23×14—21 μ. Mh. mixed with ch., alternate, ampulliform, 16—21×7—9 μ. Ms. numerous, scattered, straight or bent to circinate above, obtuse, to 520×8—11 μ. P. scattered or subaggregate, verrucose, to 320 μ diam. Sp. cylindric to subellipsoid, obtuse, 3-septate, slightly constricted, 64—74×18—23 μ.

On *Ilex formosana*, Formosa, Yamamoto, type (not seen by the present author).

In the original description the spores are stated to be 4-septate, but Yamamoto's drawings show only 3-septate spores.

(773) **Meliola khasiensis** Hansf., sp. n.

= *Meliola falcatiseta* Speg. var. *khasiensis* Hansf., Sydowia **9**: 16. 1955.

Cols. hypophyllous, dense and subcrustose, to 2 mm. diam. or confluent. velvety. Hyphae substraight to undulate, cells mostly 12—15×8—9 μ, branching opposite at wide angles, closely reticulate and solid in centre. Ch. opposite or about 10% alternate, antrorse or spreading, usually straight, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. globose to oblong, entire, 8—14×7—11 μ. Mh. not seen. Ms. numerous, closely scattered, simple, obtuse, to acute, arcuate, coiled or uncinate above, to 500×10—12 μ. P. crowded in centre, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—49×17—19 μ.

On *Ilex* sp., India, in Herb. Kew, type (collector unknown).

(774) *Meliola ciferrii* Hansf., nom. n.
= *Meliola ilicicola* Hansf., Proc. Linn. Soc. London **160**: 126. 126. 1948. non Yamamoto, 1940.

Cols. epiphyllous, dense, slightly velvety, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 20—40×6—8 μ, branching opposite or irregular at wide angles, closely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—29 μ long; stc. cylindric to ucneate, straight or bent, 8—13 μ long; hc. rarely cylindric to clavate and entire, mostly irregularly rounded-angulose to bent or undulate, 12—18×8—15 μ. Mh. few, scattered amongst ch., alternate or opposite, ampulliform, 15—19×7—9 μ. Ms. thinly scattered, straight to somewhat flexuous, simple, obtuse, to 360× 7—9 μ, attenuate to about 3 μ at apex. P. scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—43× 18—21 μ.

On *Ilex montana*, San Domingo, Ciferri, Mycofl. doming. exs. 161, type; Ciferri 2852 (S).

The ms. are found only in unparasitised colonies.

Host Family 173. Celastraceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

2101.4240	Cols. solid, crustose; hyphae undulate; hc. lobate	*stevensii*	(775)

Appendiculella

2203.4230	Cols. dense, minute; hyphae substraight; hc. stellate-lobate; spp. 5—12, bent to uncinate, obtuse, to 100 × 25 μ	*kalalauensis*	(776)
2201.4240	Cols. thin; hyphae straight to tortuous; hc. angulose to sublobate; app. numerous, obtuse, bent, to 80 × 20 μ	*gloriosa*	(777)
2201.5330	Cols. dense; hyphae substraight; hc. deeply lobate; ypp. obtuse, to 90 × 25 μ	*speciosa*	(778)

Asteridiella

3103.4230	Cols. dense; hyphae substraight; hc. globose-piriform; p-cells conoid	*toroana*	(781)
3101.5330	Cols. dense; hyphae substraight; hc. crenate-lobate; P-cells conoid, to 35.μ	*pleurostyliae*	(782)
3101.3220	Cols. dense, crustose; hyphae substraight; hc. small, subglobose, entire, P-cells conoid, to 15 μ high	*gymnosporiae*	(783)
2101.4240	Cols. dense, crustose; hyphae substraight; hc. angulose to lobate; P-cells conoid, to 20 μ high	*waimeana*	(784)
2101.4230	Cols. thin, larger; hyphae substraight; hc. angulose to lobate; P-cells conoid, to 15 μ high	*perrottetiae*	(785)

Meliola

2111.63×2	Cols. thin to subdense; hyphae straight to undulate; hc. stellate-lobate; ms. acute	*euonymi*	(786)
3113.3221	Cols. thin; hyphae substraight to undulate; hc. ovate to conoid; ms. acute	*lophopetali*	(787)
3112.4221	Cols. subvelvety; hyphae substraight; hc. entire, subglobose; ms. obtuse to subacute ..	*dallasica*	(788)
3111.5333	Cols. dense, velvety; hyphae straight to undulate; hc. lobate; ms. acute.....	*evansii*	(789)

(775) *Amazonia stevensii* Hansf., emend. Hansf., Sydowia Beih. **1**: 91. 1957.

= *Actinodothis perrottetiae* Stev., Bull. Bishop Mus., **19**: 51. 1925.

Cols. amphigenous, to 5 mm. diam., solid, crustose, smooth or becoming slightly elevated over the perithecia, margin slightly crenulate. Hyphae substraight to undulate, branching alternate or irregular, acute, densely radiating and becoming solid, especially towards the ege of the colony, where few hyphopodia occur, cells mostly 15—25× 7—8 μ. Ch. alternate, antrorse, straight or bent, 20—33 μ long; stc. cuneate to cylindric, 4—15 μ long; hc. versiform, irregularly lobate, 15—24×11—23 μ. Mh. not seen. P. maturing beneath the mycelial pellicle, more or less laterally connate, to 400 μ diam. and about 120 μ high. Sp. oblong, obtuse, 3-septate, constricted, 42—48×15—18 μ, often slightly bent.

On *Perrottetia sandwicensis*, Hawaii, Stevens 717 (type), 1159 p. p. 474 p. p., Lyon 168, Degener 3923 (F, FLS).

(776) *Appendiculella kalalauensis* Hansf., Sydowia Beih. **1**: 92. 1957.

= *Irene perrottetiae* (Stev.) Hansf., Sydowia **9**: 31. 1955, pro parte.

Cols. mostly hypophyllous, dense, to 0.5 mm. diam. Hyphae substraight, branching alternate or irregular, acute, to wide, densely reticulate and almost solid, cells mostly 10—15×7 μ. Ch. alternate or to 2% opposite, crowded, antrorse, usually straight, 18—28 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. irregularly stellate-lobate, 12—22×11—20 μ. Mh. mixed with ch., few, alternate, ampulliform, 14—18×7—8 μ. P. single or rarely 2 per colony, globose, rough, to 220 μ diam.; app. 5—12, radiating-erect, cylindric to conoid, clear brown, thin-walled, transversely striate, smooth, continuous, obtuse, bent to uncinate at apex, to 100×28 μ. Sp. bent cylindric, obtuse, 3-sptate, constricted, 37—42×15—17 μ.

On *Perrottetia sandwicensis*, Hawaii, Stevens 474 p. p. (type), 1055, 1159 p. p.

(777) **Appendiculella gloriosa** (Doidge) Hansf., comb. n.

= *Meliosa gloriosa* Doidge, Trans. Roy. Soc. South Africa, 8: 139. 1920.

= *Irene gloriosa* Doidge, South African Journ. Nat. Hist., 2: 40. 1920.

Cols. hypophyllous, thin, arachnoid, to 10 mm. diam. Hyphae substraight to tortuous, cells mostly 20—50×4—6 μ, branching alternate or irregular, acute, closely reticulate-interwoven. Ch. alternate, antrorse or spreading, 30—80 μ long; stc. cylindric or cuneate, 14—64 μ long, sometimes 1:septate, straight or variously bent; hc. versiform, angulose to sublobate, often bent, 12—18×13—20 μ. Mh. few, mixed with ch., ampulliform, 18—20×5—7 μ. P. scattered, to 350 μ diam.; app. numerous, ascending, 65—80×25—30 μ, tapering to obtuse, bent apex, pale brown, transversely striate, continuous, smooth. Sp. bent ellipsoid, obtuse, 3-septate, slightly constricted 45—50×15—18 μ.

On *Celastrus cordatus*, South Africa, PRET 11565, type.

(778) **Appendiculella speciosa** (Doidge) Hansf., comb. n.

= *Meliola speciosa* Doidge, Trans. Roy. Soc. South Africa, 5: 726. 1917.

= *Irene speciosa* Doidge, South African Journ. Nat. Hist. 2: 40. 1920.

Cols. hypophyllous, dense, to 5 mm. diam. Hyphae straight or slightly undulate mostly 12—25×7—10 μ ,branching opposite or irregular at wide angles, densely reticulate, Ch. alternate, sub8ntrorse, crowded, straight or bent, 23—40 μ long; stc. cuneate to cylindric, 7—11 μ long; hc. irregularly and often very deeply lovate, versiform, 17—29×20—25 μ. Mh. few, mixed with ch., alternate, ampulliform, 25×7 μ. P. in central group, to 260 μ diam.; surface cells conical. some produced into subcylindrical appendages curving upwards, 70—90× 18—25 μ, tapering somewhat to obtuse apex, transversely striate, pale brownish. Sp. ellipsoid, obtuse, 3-septate, constricted, 50— 60×20—25 μ.

On *Gymnosporia* sp., South Africa, PRET 1740, type.

(779) *Irenopsis gymnosporiae* Hansf., Journ. Linn. Soc. London 5: 537. 19318.

Cols. amphigenous, dense, crustose, to 1 mm. diam. Hyphae substraight to undulate, cells mostly 15—25×7—9 μ, branching alternate or irregular, very densely reticulate. Ch. alternate or opposite, spreading, straight or bent, 18—24 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose oblong or distorted when crowded, 12—18× 10—15 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, P. in central group, verrucose, to 250 μ diam., with 0—9 setae on upper ahlf; ps. straight, simple, acute, dark brown, to 60×8—10 μ, smooth, continuous. Sp. oblong to subellipsoid, 9btuse, 4-sepatate, slightly constricted, 39—43×16—21 μ.

On *Gymnosporia senegalensis*, Uganda, Hansford 2284 (type), 2386. 2301, 2792, 3418, 3371, 3556, Dummer 2510.

(780) **Irenopsis tehoniana** (Trott.) Hansf., comb. n.

= *Meliola tehoniana* Trott. in Sacc. Syll. Fung. 24: 376. 1926.

= *Meliola compacta* Earle, Bull. New York Bot. Gard. **3**: 306. 1905. non (Lev.) Speg., 1912.

= *Irenopsis compacta* (Earle) Stev., Ann. Mycol. **25**: 434. 1927.

= *Meliola conferta* Tehon, Bot. Gaz. **77**: 502. 1919 (non Doidge).

= *Irenopsis conferta* (Tehon) Stev., Ann. Mycol. Derlin **25**: 434. 1927.

= *Meliola earleana* Cif., Mycopathologia **7**: 123. 1954.

Cols. amphigenous, dense, subcrustose, to 2 mm. diam. Hyphae substraight, cells mostly 10—20×6—8 μ, brancihng opposite at wide angles, densely reticulate and nearly solid. Ch. opposite or alternate, spreading or antrorse, straight or slightly bent, 12—17 μ long; stc. cylindric, 2—6 μ long; hc. subglobose, entire, 8—13×8—11 μ. Mh. few, mixed with ch., opposite or alternate, amp7lliform, 15—20×6—8 μ. P. in loose central group, verrucose, to 225 μ diam.; ps. on upper half, erect-spreading, straight or flexuous, dark brown, acute or subacute, continuous to 1—2-septate, attenuate upwards, to 100×7—11 μ wide at base. Sp. ellipsoid to oblong, obtuse, 4-sptate, constricted, 38—45×16—19×14—15 μ, rarely with subapiculate ends.

On *Crossopetalum (Rhacoma)* sp., Porto Rico, Heller 6217, type; — On *Rhacoma crossopetalum*, Porto Rico, Whetzel 3289 (CUP); San Domingo, Ciferri, Mycofl. doming. exs. 182 (K); — On *Rhacoma ilicifolia*, Florida, Thaxter 7551 (F), Barrus 19108 (CUP); — On *Celastraceae* indet., Brazil, Ule, Herb. brasil. 2204 (K).

(781) *Asteridiella toroana* (Cif.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola toroana* Cif., Ann. Mycol. **36**: 223. 1938.

Cols. epiphyllous, dense, crustose, to 2 mm. diam. Hyphae substraight, cells mostly 10—15×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. opposite or alternate, spreading or antrorse. straight or slightly bent, 14—22 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to widely clavate, sometimes irregularly angulose, 10—15×9—12 μ. Mh. rare, alternate or opposite, mixed with ch. ampulliform. P. globose, verrucose, to 300 μ diam., surface cells obtusely conoid. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—42×16—19 μ.

On *Schaefferia frutescens*, San Domingo, Ciferri, Mycofl. doming. exs. 211, type.

(782) *Asteridiella pleurostyliae* (B. & Br.) Hansf., Sydowia **10**: 49. 1957.

= *Asterina pleurostyliae* B. & Br., Journ. Linn. Soc. London, **14**: 132. 1873.

= *Meliola pleurostyliae* (B. & Br.) Hoehn., in Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **119**: 459. 1910.

= *Irenina pleurostyliae* (B. & Br.) Hansf., Proc. Linn. Soc. London, **165**: 169. 1955.

= *Asterina ditricha* Kalchbr. & Cooke, Grevillea **9**: 32. 1880.

= *Meliola ditricha* (K. & C.) Doidge, Trans. Roy. Soc. South Africa, **5**: 728. 1917.
= *Irenina ditricha* (K. & C.) Stev., Ann. Mycol. **25**: 467. 1927.
= *Irene ditricha* (K. & C.) Doidge, South African Journ. Nat. Hist. **2**: 41. 1920.

Cols. amphigenous or mostly epiphyllous, dense, smooth, to 3 mm. diam. Hyphae substraight, cells mostly 20—10×8—11 μ, branching opposite or irregular, acute, densely reticulate and almost solid. Ch. alternate, antrorse, straight or slightly bent, 20—30 μ long; stc. cuneate to cylindric, 4—12 μ long; hc. versiform, crenulate or stellate-lobate, 14—22×10—18 μ. Mh. rare, mixed with ch., alternate, ampulliform. P. scattered, each on a closely radiate subiculum, rough, to 280 μ diam., surface cells conoid, to 35 μ high. Sp. wide ellipsoid, obtuse, 4-septate, rather strongly constricted, 48—55×25—28 μ.

On *Pleurostylia wightii*, Ceylon, type (S, ex Berkeley); — On *P. capensis*, South Africa, PRET 10883; — On *Celastrus* sppl, South Africa, PRET 11518, 11579; — (?) on indet. host., Brazil, Glaziou 18305 (K).

The South African specimens differ slightly from the type in larger hyphopodia and slightly narrower spores; further colllections are needed, both from Ceylon from South Africa, to establish whether the South African form is worthy of varietal rank.

(783) *Asteridiella gymnosporiae* (Syd.) Hansf., Sydowia **10**: 48. 1957.
= *Meliola gamnosporae* Sar., Ann. Mycol. **10**:79. 1912.
= *Irenina gymnosporiae* (Syd.) Ste., l. c. **25**: 467. 1927.

Cols. amphigenous, mostly epiphyllous, crustose, dense, to 2 mm. diam. Hyphae substraight, cells mostly 10—15×8—9 μ, branching opposite or irregular at wide angles, densely reticulate and almost solid. Ch. alternate, crowded, subantrorse, straight or slightly bent, 12—19 μ long; stc. cuneate to cylindric, 2—6 μ long; hc. subglobose to widely clavate, entire, 9—14×10—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. P. closely crowded in centre, verrucose, to 180 μ diam. Sp. oblong to subelli0psoid, obtuse, 4-septate, constricted, 33—40×15—18×11—13 μ.

On *Gymnosporia spinosa*, Philippines, PBS 7422 (type), 30617, Clemens 130, PBS 30617, 27835; — On *Celastraceae* indet. (? *Gymnosporia* sp.), Tonkin, Bon 5191 (Herb. Patouillard in F).

(784) *Asteridiella waimeana* Hansf., Sydowia Beih. **1**: 92. 1957.

Cols. amphigenous, dense, crustose, to 1 mm. diam., smooth, the margin solid, crenulate. Hyphae substraight, branching alternate or irregular at acute angles, densely radiating, cells mostly 10—15×7—9 μ. Ch. alternate, antrorse, straight or bent, 17—28 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. versiform, rounded-angulose to irregularly stellate-lobate, 10—19×10—18 μ. Mh. not seen. P. globose, verrucose, t9o 400 μ diam., surface cells rounded to obtuse

conoid, to 20 μ high. Sp. bent cylindric, obtuse, 3 septate, constricted, 38—46×16—19 μ.

On *Perrottetia sandwicensis*, Hawaii. Stevens 1055, type (FLS).

(785) *Asteridiella perrottetiae* (Stev.) Hansf., Sydowia Beih. **1**: 91. 1957.

= *Amazonia perrottetiae* Stev., Bull. Bishop Mus. **19**: 47. 1925.

= *Irene perrottetiae* (Stev.) Hansf., Sydowia **9**: 31, 1955, pro parte.

Cols. amphigenous, thin, to 5 mm. diam., smooth. Hyphae substraight to slightly undulate, branching alternate or irregular at acute angles, loosely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate. antrorse, straight or bent, 20—27 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. versiform, from rounded-angulose to deeply and irregularly stellate-lobate, 12—19×10—20 μ. Mh. fairly numerous, mixed with ch., opposite or mostly alternate, ampulliform, 13—20×6—7 μ. P. loosely scattered, globose, rough, to 230 μ diam.; surface cells obtuse conoid, to 15 μ high. Sp. bent cylindric, obtuse, 3-septate. constricted, 37—46×13—15 μ.

On *Perrottetia sandwicensis*, Hawaii, Stevens 717-a (type), 702, 1159 p. p. (FLS, F).

(786) *Meliola euonymi* Stev. ex Hansf., Sydowia Beih. **1**: 108. 1957.

Cols. amphigenous, mostly hypophyllous, to 5 mm. diam. or widely confluent, thin to subdense. Hyphae substraight to undulate, branching alternate or irregular, acute, becoming closely reticulate, cells mostly 30—40×8—10 μ. Ch. alternate or more scattered, subantrorse, straight or ireregularly bent, 40—55 μ long; stc. cuneate, the sides straight or crenulate, 10—20 μ long; hc. very irregularly and deeply stellate-lobate, often bent, versiform, 25—33×20—20 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 20—30×8—9 μ. Ms. scattered, straight, simple, acute, to 400×7—8 μ. P. scattered, verrucose, immature. Sp. bent ellipsoid, obtuse, 4-septate, constricted, 57—64×22—24 μ.

On *Euonymus* sp., Philippines, PBS 32154, type (FLS).

(787) *Meliola lophopetali* Stev. ex Hansf., Sydowia Beih. **1**: 111. 1957.

Cols. amphigenous, to 2 mm. diam., thin. Hyphae substraight to finely undulate, branching opposite at wide angles loosely reticulate cells mostly 15—25×6—7 μ. Ch. opposite or alternate in varying proportions, spreading, straight or bent, 13—19 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate, oblong or subconoid, apex obtuse, often slightly bent, 11—15×7—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—21×6—7 μ, neck elongate. Ms. few, mostly grouped around P., straight, simple, acute, to 250×7 μ. P. scattered, black, globose, slightly verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—38×15—16μ.

On *Lophopetalum toxicum*, Philippines, PBS 25076, type (FLS).

(788) *Meliola dallasica* Petr. Sydowia 8: 19. 1954.

Cols. amphigenous, mostly epiphyllous, closely scattered or confluent, subvelvety. Hyphae substraight, 5—7 μ thick, septate, ramose. Ch. numerous, opposite, or rarely alternate, short cylindric, ovoid, or ellipsoid; stc. 3—4.5 μ long; hc. obtusely rounded, entire, straight or slightly bent, 12—15×8—10 μ. Mh. few, alternate or opposite, sublageniform. Ms. numerous, scattered or grouped around P. straight, simple, obtuse to subacuminate, to 250×9—12 μ. P. loosely scattered, verrucose, to 200 μ diam. Sp. oblong to fusoid, ends slightly attenuate and widely rounded, 4-septate, rather strongly constricted, 42—50×15—17.5×12—13.5 μ, the middle cell the largest.

On *Perrottetia* sp., British North Borneo, Clemens s. n.

(789) *Meliola evansii* Doidge, Trans. Roy. Soc. South Africa 8: 112. 1920.

Cols. amphigenous and caulicolous, dense, often velvety. Hyphae hraight or undulate, cells mostly 20—27×3—8 μ, branching alternate, acute, densely reticulate. Ch. alternate, straight or bent, spreading or antrorse-bent, 24—40 μ long; stc. cylindric to cuneate, 6—11 μ long; hc. versiform, often irregularly bent, 2—5-lobate or rounded-angulose, 18—30×10—12 μ. Mh. rare, mixed with ch., alternate, narrowly conoid, 16—19×6—7 μ. Ms. often very numerous, scattered, simple, acute when fully mature, to 600×6—8 μ. P. scattered, verrucose, to 280 μ diam., surface cells convex-rounded. Sp. ellipsoid, obtuse, 3-septate, slightly constricted, 47—57×18—24 μ.

On *Cassine eucleaeforme*, South Africa, PRET 10222; — On *Gymnosporia albata*, South Africa, PRET 8392, 8393; — On *Pterocelastrus tricuspidatus*, South Africa, PRET 11237, 17206, 20346.

Host Family 178. Hippocrateaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3103.4330	Cols. dense, crustose; hyphae substraight to crooked; hc. subglobose, entire; P-cells bent-conoid, to 40 μ high	*hippocrateae*	(790)
3101.4330	Cols. dense; hyphae substraight; hc. ovate to piriform or angulose; P-cells obtuse vonoid, to 25 μ high	*salaciae-erectae*	(791)

Meliola

2111.4232	Cols. subdense, subvelvety; hyphae straight or undulate; hc. deeply lobate; ms. acute	*guaranitica*	(792)
2113.4221	Cols. subdense, velvety; hc. 3-lobate or angulose; ms. acute	*hippocrateicola*	(793)
2111.4221	Cols. dense, subvelvety; hc. angulose to lobate; ms. acute	*oligomera*	(794)

31⅓3.4222	Cols. subdense, subvelvety; hc. oblong, entire; ms. acute or dentate	*hippocrateae*	(795)
31⅓3.3222	Cols. subdense, velvety; hc. oblong to ovate, entire; ms. acute or dentate	*hippocrateae* var. *cameroonensis*	(796)
31⅓3.4222	Cols. thin to subdense; hc. subglobose to clavate, entire; ms. acute, obtuse or dentate	*salaciae*	(797)
3113.5221	Cols. dense; hc. globose to clavate, entire; ms. acute	*montagnei*	(798)

(790) *Asteridiella hippocrateae* (Hansf. & Deight.) Hansf., Sydowia **10**: 48. 1957.

= *Irenina hippocrateae* Hansf. & Deight., Mycol. Paper, IMI **23**: 39. 1948.

Cols. amphigenous, mostly epiphyllous, dense, crustose. Hyphae substraight (crooked in hypophyllous colonies), cells 9—20×7—10 μ, branching opposite or alternate, acute, densely reticulate and almost solid. Ch. alternate or opposite, closely crowded, antrorse or spreading, 12—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 9—15×8—13 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. P. closely scattered, verrucose, to 210 μ diam., surface cells conical, or extended into processes to 40 μ high, bent, obtuse, dark brown, striate above. Sp. oblong, obtuse, 4-septate, constricted, 42—50×18—23 μ.

On *Hippocratea clematoides*, Uganda, Hansford 3592, type; — On *H. welwitschii*, Sierra Leone, Deighton 1506.

(791) *Asteridiella salaciae-erectae* Deight., Sydowia **11**: 93. 1958.

Cols. epiphyllous, dense, to 2 mm. diam., rarely also hypophyllous. Hyphae straight, cells mostly 12—25×8 μ, branching opposite, rectangular, densely reticulate. Ch. alternate, spreading, straight or slightly bent, 18—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to piriform with sinuous outline, sometimes sublobate or angulose, 14—20×10—14 μ. Mh. mixed with ch., alternate, ampulliform, 18—23×8—11 μ. P. loosely grouped in centre, rough, to 280 μ diam.; surface cells obtusely conoid, often bent, to 25 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—47×19—21 μ.

On *Salacia* erecta., Sierra Leone, Deighton 6037 in IMI 57301, type.

(792) *Meliola guaranitica* Speg., Anal. Soc. Cient. Argentina, **21**: 71. 1883.

Cols. amphigenous, to 4 mm. diam. or confluent, subdense, thinly velvety. Hyphae substraight to undulate, branching alternate or irregular, acute, closely interwoven-reticulate. cells mostly 20—30×6—7 μ. Ch. alternate, subantrorse or spreading, usually bent, 22—35 μ long; stc. cylindric to cuneate, 5—15 μ long; sometimes gibbous or angulose above; hc. very irregularly and deeply lobate, versirfom, often irregularly bent, 13—24×11—18 μ. Mh. mixed with ch., few,

mostly alternate, ampulliform, 18—24×6—9 μ. Ms. few to numerous, scattered and grouped around P., straight, simple, acute when fully nature, to 400×7—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. bent cylindric to subellipsoid, obtuse, 3-septate, constricted, 40—48×14—16 μ.

On *Hippocratea* sp., Paraguay, Balansa 3782 (type) (SPEG 545); Bertoni 1116 (SPEG 618), Balansa 3782, 4019, 4043, Balansa in Roum. Fung. sel. exs. 4130 (K, S, P); Balansa 3602 (SPEG 624), Anisitz 144 (SPEG 617).

(793) *Meliola hippocrateicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 39. 1948.

Cols. epiphyllous, velvety, dense, to 5 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells 15—28×6—7 μ, branching mostly alternate at wide angles, closely reticulate, Ch. alternate or about 2% opposite, spreading, straight or slightly bent, 17—23 μ long; stc. cuneate, 4—7 μ long; hc. more or less deeply 3-lobate, or merely rounded-angulose, straight or bent, 10—17×10—17 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 15—20×5—7 μ. Ms. numerous, scattered, straight, simple, acute, to 260×8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 3-septate, slightly constricted, 34—41×11—14 μ.

On *Hippocrates ?richardiana*, Sierra Leone, Deighton 2264, type.

(794) *Meliola oligomera* Syd., Ann. Mycol. **15**: 190. 1917.

= *Meliola reinkingii* Syd., loc. cit. **18**: 98. 1920.

Cols. epiphyllous, dense, slightly velvety, becoming confluent over leaf. Hyphae substraight to undulate, cells mostly 20—40×6—7 μ, branching alternate or irregular, not opposite, acute, densely interwoven-reticulate. Ch. alternate, subantrorse, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 3—12 μ long; hc. irregularly clavate to 2—5-lobate, 13—18×11—16 μ. Mh. few, mixed with ch., alternate, ampulliform. Ms. numerous, scattered, straight to slightly bent, simple, acute, to 250×8—10 μ. P. in central group ,verrucose, to 200 μ diam. Sp. cylindric, obtuse, 3-septate, slightly constricted, 39—44×12—14 μ.

On *Hippocrates* sp., Philippines, PBS 23882, type; — On *H. indica*, Ceylon, Thwaites s. n. (K), Desmazieres 8 (P); Java. BO 13019.

(795) *Meliola hippocrateae* Doidge, Bothalia **4**: 849. 1948.

Cols. epiphyllous, subdense, thinly velvety, to 3 mm. diam. Hyphae substraight, cells mostly 15—20×6—8 μ, branching opposite, subrectangular, rather closely reticulate. Ch. alternate or about 2% opposite, more or less antrorse, straight or slightly bent near the tips, 15—20 μ long; stc. cylindric, 2—6 μ long; hc. cylindric with rounded apex, entire, 11—15×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. fairly numerous, closely

scattered, straight, simple, acute, or 2—3-dentate to 10 μ, rarely shortly 2-furcate with nmiutely denticulate branches. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45×16—18 μ.

On *Hippocratea schlechteri*, South Africa, PRET 14971, type.

(796) *Meliola hippocrateae* Doidge var. *cameroonensis* Doidge, Bothalia 4: 850. 1948.

Cols. epiphyllous, to 3 mm. diam., subdense, velvety. Hyphae substraight, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 2% opposite, spreading or antorse, usually straight, 13—18 μ long; stc. cylindric, 3—6 μ long; hc. cylindric to ovate, entire, 9—14×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. closely scattered, straight, simple, acute, to 400×7—9 μ, sometimes 2—3-dentate to 8 μ. P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—38×12—14 μ.

On *Hippocratea bipindensis*, Cameroons, Zenker 3691, type; — On *Salacia philippinensis*, Philippines, PBS 2211 (S, K), with setae to 750 μ long, thinner colonies, and ch. to 25 μ long.

(797) *Meliola salaciae* Hansf., Proc. Linn. Soc. London 157: 182. 1946.

Cols. epiphyllous, rarely also hypophyllous, thin to subdense, to 3 mm. diam. Hyphae straight to slightly undulate, cells 15—20×6—7 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or to 20% opposite, usually antrorse, straight or slightly bent, 14—18 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. clavate, entire, 10—14×8—10 μ. Mh. scattered, mixed with ch., opposite or alternate, ampulliform 12—20×6—9 μ. Ms. scattered, straight, simple, acute or obtuse ,or 2-dentate to 10 μ ,to 480×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—43×13—16 μ.

On *Salacia elegans*, Uganda, Hansford 3362, 3610; — On *S. senegalensis*, Sierra Leone, Deighton 439, 2362, 735, 1029, 1888, 1213, 2038; — On *S.* sp., India, Thirumalachar s. n.!

(798) *Meliola montagnei* Pat. in Gaill., Le Genre *Meliola*, p. 85. 1892.

Cols. amphigenous, dense, to 2 mm. diam. Hyphae substraight, cells 12—20×7—8 μ, branching opposite or irregular, closely radiating-reticulate. Ch. alternate or to 10% opposite, straight or antrorse-bent, 16—22 μ long; stc. cuneate to cylindric, 3—10 μ long; hc. globose to pririform, entire, 11—15×9—14 μ. Mh. few, separate, opposite or alternate, ampulliform, 15—21×6—8 μ. Ms. scattered, straight, simple, acute, to 280×8—10 μ. P. scattered, verrucose, to 190 μ diam.

Sp. oblong, obtuse, 4-septate, rather strongly constricted, 52—58× 17—20 μ.

On *Salacia* sp., Reunion, type (P).

Host Family 179. Icacinaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.4230 Cols. subdense; hyphae undulate; hc. ovate, piriform or angulose; ps. to 20, flexuous, obtuse, to 150 μ long ..... *comatz* (799)

Meliola

21½1.6342 Cols. dense, velvety; hc. ovate to lobate; ms. straight to arcuate, obtuse ..... *villaresiae* (800)

21½1.6342 Cols. dense, velvety; hc. ovate to lobate; ms. straight to arcuate, obtuse ..... *apjdytis* (800)

2121.5332 Cols. dense, velvety; hc. angulose to lobate; ms. arcuate to flexuous, obtuse ..... *campylotricha* (801)

3121.6332 Cols. dense, velvety; hc. ovate to oblong, entire; ms. arcuate to widely mamate, obtuse to acute ..... *adunciseta* (801)

3121.4242 Cols. dense, velvety, caulicolous; ms. falcate to flexuous, obtuse ..... *cladophila* (802)

3111.5332 Cols. dense, velvety; hyphae undulate; hc. cylindric-clavate, entire; ms. straight, simple, acute ..... *citronellae* (803)

3111.4333 Cols. dense, subvelvety; hyphae substraight to crooked; hc. ovate-piriform, entire; ms. substraight, obtuse ..... *villaresiicola* (804)

3111.53×× Cols. subdense; hyphae substraight; hc. ovate to angulose; ms. straight, obtuse ..... *villaresiana* (805)

(799) *Irenopsis comata* (Doidge) Stev., Ann. Mycol. **25**: 437. 1927.
= *Meliola comata* Doidge, Trans. Roy. Soc. South Africa, **8**: 111. 1920.
= *Meliola zehneriae* Van der Bijl, South African Journ. Sci., **23**: 283. 1926.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., subdense. Hyphae undulate to flexuous, cells 18—28×7—10 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 4—6 μ long; hc. ovate, piriform or rounded-angulose, 12—19× 9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—20×6—7 μ. P. in central group, to 240 μ diam., surface cells convex; ps. about 20, up to 150 μ long, 2—4-septate, 6—8 μ thick below, tapering to obtuse, apex 3 μ wide, straight or flexuous, not uncinate, smooth. Sp. oblong, obtuse, 4-septate, constricted, 40—45× 15—17 μ.

On *Pyrenacantha scandens*, South Africa, PRET 11020, 17208, 17192.

(800) *Meliola villaresiae* P. Henn., Hedwigia **36**: 218. 1907.

Cols. hypophyllous, to 10 mm. diam., velvety, dense. Hyphae crooked, branching opposite or irregular, acute, densely interwoven-reticulate, cells mostly 30—40×9—10 μ. Ch. alternate, very irregular in shape and size, up to 70 μ or more long; stc. cylindric, often tortuous or bent, sometimes 1—2-septate, up to 50 μ long; hc. ovate and entire, to elongate or very irregularly lobate, 17—27×10—18 μ. Mh. few, mixed with ch., alternate, ampulliform, 20—25×7—10 μ. Ms. numerous, scattered, straight or widely arcuate, simple, obtuse, to 400×11—12 μ. P. scattered, verrucose, to 340 μ diam. Sp. ellipsoid, 3-septate, obtuse, constricted, 64—72×25—28 μ.

On *Villaresia* sp., Brazil, Glaziou 22713 p. p. (type), 22712 (S).

(800-a) *Meliola apodytis* Van der Bijl, South Afrc. Journ. Scie. **25**: 185. 1928.

Cols. amphigenous, velvety, to 3 mm. diam., dense. Hyphae 8—10 μ thick, branching opposite or irregular, closely reticulate. Ch. alternate; stc. 12—20×12 μ; hc. cylindric to ovate, compressed or lobate, 16 μ diam. or 20×12 μ. Mh. scant, ampulliform, 24×8 μ. Ms. numerous, straight to arcuate or flexuous, obtuse, to 415×10—12 μ P. scattered, verrucose, to 400 μ diam. Sp. ellipsoid-oblong, obtuse, 3-septate, slightly constricted, 64—72×20—24 μ.

On *Apodytes dimidiata*, South Africa, Van der Bijl 2491, type.

Material of this species has not been available to the present author; it would appear to be very closely related to *Meliola campylotricha* Syd., differing mainly in the larger ascospores and in less uncinate setae. The specimen Hendrickx 3142, on the same host, Congo Belge, is best placed here, having spores to 66×22 μ.

(801) *Meliola campylotricha* Syd., Ann. Mycol. **22**: 420. 1924.

Cols. epiphyllous, dense, velvety, to 4 mm. diam. Hyphae substraight, branching opposite at wide angles, densely reticulate-interwoven, cells mostly 25—30×7—9 μ. Ch. alternate, antrorse or spreading, straight or bent; stc. cylindric to cuneate, 8—15 μ long; hc. irregularly and variously lobate, 15—20×14—18 μ. Mh. not seen. Ms. very numerous, closely scattered, simple, obtuse, flexuous to arcuate-falcate, to 320×8—12 μ. P. scattered, verrucose, to 300 μ diam. Sp. oblong-cylindric, obtuse, 3-septate, constricted, 52—60×18—20 μ, the middle cells usually larger.

On *Apodytes dimidiata*, South Africa, Van der Bijl 1515, type.

(801-a) *Meliola adunciseta* Hansf.

Cols. epiphyllous, dense, velvety, to 4 mm. diam. or widely confluent. Hyphae substraight, branching opposite, acute, densely reticulate, cells mostly 16—24×8—9 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 26—36 μ long; stc. cuneate, 6—10 μ long; hc. ovate to oblong, entire, 20—26×11—14 μ. Mh. separate in centre of colony, few, opposite or alternate, ampulliform,

19—29×8—9 μ, neck elongate. Ms. numerous, closely scattered and grouped around P., arcuate to widely hamate above, simple, obtuse to acute, to 330×10—11 μ. P. scattered, verrucose, to 260 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 54—65×23—26×16—19 μ.

On *Villaresia* sp., Brazil, Herb. Patouillard in F.

(802) *Meliola cladophila* Syd., Ann. Mycol. 24: 294. 1926.

Cols. ramicolous, dense, velvety, to 8 mm. long. Hyphae very densely interwoven, 6—9 μ thick, septate, nodulose, with numerous short branches. Hyphopodia few, rudimentary. Ms. very numerous, simple, curved, falcate or sigmoid, rarely almost straight, 300—350×11—16 μ, tapering or slightly thickened at obtuse apex. P. scattered, smooth, to 325 μ diam. Sp. oblong, straight or slightly bent, tapering slightly towards both obtuse ends, 4-septate, constricted, 42—47×17—20 μ, the central cell usually the largest.

On *Apodytes dimidiata*, South Africa, Van der Bijl 1661, type.

Material of this species has not been available to the present author, and the above description is condensed from that of Doidge, Bothalia 2: 447, 1928.

(803) *Meliola citronellae* Hansf., Proc. Linn. Soc. N. S. W., 78: 59. 1953.

Cols. amphigenous, dense, velvety, to 3 mm. diam. or sometimes confluent. Hyphae undulate, cells mostly 20—35×7—8 μ, branching opposite, acute, closely reticulate and almost solid in centre. Ch. alternate, antrorse, straight or bent, 30—40 μ long; stc. cuneate to cylindric, 6—15 μ long; hc. cylindric to clavate, entire, often bent, 20—31×10—14 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 20—30×8—9 μ. Ms. numerous, scattered, straight, simple, acute, to 350×9—11 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—53×19—23 μ, middle cell often largest.

On *Citronella moorei*, New South Wales, Fraser 66, type, 201.

(804) *Meliola villaresiicola* Speg., Anal. Muc. Nac. Buenos Aires 32: 379. 1924.

Cols. amphigenous, dense, to 2 mm. diam. or confluent. subvelvety. Hyphae substraight to crooked, branching opposite or irregular, acute, closely reticulate, cells mostly 15—25×7—8 μ. Ch. alternate, more or less antrorse, straight or bent, 17—25 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. ovate to piriform, entire, 13—19×8—11 μ. Mh. few, separate in centre iof colony, mostly alternate, ampullform, 16—21×7—9 μ. Ms. fairly numerous, scattered, more or less straight, simple, obtuse, to 750×9—10 μ, gradually attenuate to 3 μ at rounded apex. P. scattered, verrucose, to 280 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 39—46×20—22 μ.

On *Villaresia megaphylla*, Argentina, SPEG 501, type.

(805) *Meliola villaresiana* Hansf., Sydowia Beih. 1: 119. 1957.

Cols. epiphyllous, to 1 mm. diam., subdense, nearly smooth. Hyphae substraight to slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—25×7—9 μ. Ch. alternate, antrorse, usually straight, 25—35 μ long; stc. cuneate, 5—13 μ long; hc. ovate, entire or slightly irregular, rounded at apex, 20—25× 12—15 μ. Mh. separate, opposite or alternate, ampulliform, 22—25× 7—9 μ. Ms. grouped around P., straight, simple, obtuse, —300×10— 11 μ (immature). P. scattered, globose, verrucose, —120 μ diam. (immature). Sp. cylindric, obtuse, 4-septate, constricted, 48—58× 22—24 μ.

On *Villaresia* sp. Brazil, Glaziou 22713 p. p., type (S, BRUX).

Host Family 180. Salvadoraceae.

(806) *Meliola azimae* Doidge, Bothalia 2: 450. 1928.

(3113.4233) — Cols. amphigenous and caulicolous, mostly epiphyllous. to 3 mm. diam., often confluent, dense, somewhat velvety. Hyphae substraight, cells mostly 20—35×7—10 μ. branching opposite, acute, densely reticulate. Ch. opposite or about 10% alternate, spreading or antrorse-bent, sometimes recurved, 16—24 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with truncate or rounded apex, entire, often bent, 11—19×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×6—7 μ. Ms. numerous, simple, straight, acute, to 640×10—12 μ. P. in central group, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—50×16—20 μ.

On *Azima tetracantha*, South Africa, Pret 22387, type.

Host Family 182. Olacaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3403.4230	Cols. dense; hyphae straight to undulate; hc. small, globose-ovate; ps. 5—20, straight, obtuse, to 140 μ	*seyboensis*	(807)

Asteridiella

3101.5330	Cols. dense, solid; hyphae substraight; hc. globose; P-cells conoid-mammillate, to 25 μ high	*ximeniae*	(808)
3101.4330	Cols. dense; hyphae substraight to undulate; hc. subglobose to angulose; P-cells conoid-mammillate to 30 μ high	*scorodocarpi*	(809)
2101.4230	Cols. thin to dense; hyphae straight; hc. crenate-lobate; P-cells bent conoid, to 40 μ high	*strombosiae*	(810)

Meliola

3133.4321	Cols. dense; hyphae substraight; hc. subglobose-piriform, entire; ms. 1-2-dichotomous	*ekmaniana*	(811)

3123.4221	Cols. dense, velvety; hyphae substraight; hc. globose-oblong, entire; ms. arcuate to uncinate, acute	*anacolosae*	(812)
3111.3221	Cols. thin to subdense; hyphae substraight; hc. clavate, entire; ms. straight, obtuse	*olacis*	(813)

(807) *Irenopsis seyboensis* Cif., Ann. Mycol. **36**: 221. 1938.

Cols. amphigenous, thin to dense, to 4 mm. diam. Hyphae substraight to sinuous, cells mostly 10—15×7—8 μ, branching vlose, opposite at wide angles, densely reticulate. Ch. opposite or alternate, spreading or subantrorse, 12—15 μ long; stc. cylindric, 2—5 μ long; hc. globose to ovate, entire, 8—12×6—10 μ. Mh. mixed with ch., few, opposite or alternate, conoid to ampulliform, 14—17×7—9 μ. P. scattered or in loose central group, verrucose, to 220 μ diam.; ps. 5—20, erect-spreading, obtuse, straight or slightly bent, continuous, smooth, to 140×7—8 μ. Sp. ellipsoid to oblong, obtuse, 4-septate, constrictec, 35—44×14—16 μ.

On *Ximenia americana*. San Domingo, Ciferri, Mycofl. doming. exs. 250, type (mixed with *Asteridiella ximeniae*).

(808) *Asteridiella ximeniae* (Batista & Silva) Hansf., Sydowia **10**: 51. 1957.

= *Irenina ximeniae* Batista & Silva, Anal. IV Congr. Soc. Bot. Brazil, p. 95. 1953.

= *Irene ximeniae* Hansf., Sydowia **9**: 36. 1955.

Cols. amphigenous, mostly hypophyllous, to 3 mm. diam. or confluent, dense. Hyphae substraight, cells mostly 10—15×8—11 μ, branching close, opposite or irregular at wide angles, very densely reticulate and almost solid, in places forming solid fans of adherent hyphae. Ch. alternate or opposite in varying proportions, crowded, spreading, straight or antrorse-bent, 15—25 μ long; stc. cylindric to cuneate, 3—12 μ long; hc. globose to oblong, entire, 12—18×8—16 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform to conoid, 16—35×8—10 μ, neck sometimes much elongate. P. in loose central group, verrucose, to 330 μ diam., surface cells conoid to mammillate, projecting up to 25 μ. Sp. ellipsoid, obtuse or apiculate at ends, 4-septate, constricted, 42—52×20—24×16—19 μ.

On *Ximenia americana*, Brazil, Lopes 3621, type, IMUR 219, 267 San Somingo, *Ciferri*, Mycofl. doming. exs. 250 p. p.

(809) *Asteridiella scorodocarpi* Hansf., Sydowia **10**: 50. 1957.

= *Irene scorodocarpi* Hansf., Sydowia **9**: 36. 1955.

Cols. hypophyllous, dense, smooth, to 5 mm. diam. or confluent. Hyphae substraight to slightly sinuous, cells mostly 13—20×7—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading, usually straight, 14—18 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. subglobose to slightly rounded-angulose, usually entire, 10—13×8—11 μ. Mh. few, mixed with ch., opposite or

alternate, ampulliform, 16—25×7—9 μ, neck elongate. P. closely scattered, verrucose, to 290 μ diam., surface cells bent conoid to mammillate, projecting up to 30 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—49×18—21 μ.

On *Scorodocarpus borneensis*, Borneo, Forest Dept. 4355, type (K).

(810) *Asteridiella strombosiae* Hansf., Sydowia **10**: 50. 1957.

= *Irenina strombosiae* Hansf., Proc. Linn. Soc. London **157**: 172. 1948.

Cols. epiphyllous, minute, less than 1 mm. diam., thin to subdense. Hyphae straight, cells mostly 20—50×7—9 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate, antrorse or spreading, straight or bent, 22—32 μ long; stc. cylindric to cuneate, 8—12 μ long; hc. subglobose to clavate with crenate or sublobate margin, 12—22×10—20 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—28×8—10 μ. P. in close central group, to 280 μ diam., surface cells mammiollate or with curved processes to 40 μ high, obtuse, dark brown, indistinctly striate. Sp. dark chestnut-brown, bent ellipsoid, obtuse, 3-septate, constricted, 39—47×15—10 μ.

On *Strombosia scheffleri*, Uganda, Hansford 2623, type.

(811) *Meliola ekmaniana* Cif., Mycopathologia **7**: 124. 1954.

Cols. epiphyllous, to 1 mm. diam. or numerous and confluent, dense. Hyphae substraight, cells mostly 15—20×7—9 μ, branching opposite or irregular, at wide angles, closely reticulate. Ch. alternate or about 5% opposite, spreading, straight or slightly bent, 14—23 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to wide piriform, entire, 11—17×9—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—21×8—10 μ. Ms. thinly scattered and grouped around P., straight, to 200×8—9 μ, apex very shortly 1—2-dichotomous to 18 μ, branches dentate to 10 μ. P. in central group, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—47×19—21×14—16 μ.

On *Schoepfia obovata*, San Domingo, Ciferri 2886, type (S).

(812) *Meliola anacolosae* Hansf., Reinwardtia **3**: 98. 1954.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense, velvety. Hyphae substraight, cells mostly 15—25×6—8 μ, branching opposite, acute, densely reticulate and almost solid in centre. Ch. opposite or alternate where crowded, straight or slightly bent, 13—18 μ long; spreading or subantrorse; stc. cylindric, 2—6 μ long; hc. globose to oblong or piriform, entire, 7—13×7—10 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 13—17×7—10 μ. Ms. numerous, evenly scattered, widely arcuate to uncinate, simple, acute or subacute, to 290×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—44×14—16×11—13 μ, the central cell often slightly the largest.

On *Anacolosa frutescens*, Java, BO 9298, type.

(813) *Meliola olacis* Deight., Sydowia **5**: 8. 1951.

Cols. hypophyllous, rarely epiphyllous, thin to subdense, to 13 mm. diam. or confluent. Hyphae substraight or slightly undulate, cells mostly 30—40×5—7 μ, branching opposite or alternate at wide angles, loosely reticulate. Ch. alternate, straight or slightly bent, spreading or sometimes retrorse, 17—28 μ long; stc. cylindric to cuneate, 6—11 μ long; entire, ellipsoid to obovate, 11—14 ×8—10 μ. Mh. numerous, mixed with ch.,opposite or alternate, 18—30×6—7 μ. Ms. few, scattered and grouped around P., straight or sometimes bent, simple, obtuse, sometimes torulose near apex, to 295×6—8 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—32×11—13×9 μ.

On *Olax mannii*, Sierra Leone, Deighton 2620, type.

Host Family 183. Opiliaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola			
3143.4231	Cols. dense, crustose; hc. clavate, entire;	*agonandrae*	(814)
3143.4221	Cols. dense, velvety, subcrustose; hyphae substraight; hc. ovate-clavate, entire; ms. dentate-furcate to 30 μ	*cansjerae*	(815)
31⅓2.4231	Cols. dense, velvety; hyphae straight; hc. subglobose-piriform, entire; ms. obtuse or dentate to 10 μ	*opiliae*	(816)
3113.4223	Cols. dense, velvety; hyphae straight; hc. subglobose-piriform, entire; ms. simple, acute	*opiliae* var. *singalensis*	(817)
3113.4222	Cols. dense, velvety; hyphae substraight; hc. ovate-oblong, entire or angulose; ms. simple, obtuse	*champereiae*	(818)

(814) *Meliola agonandrae* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 388. 1924.

Cols. epiphyllous, to 2 mm. diam.. dense, velvety. Hyphae substraight, branching opposite or irregular. at wide angles, becoming densely reticulate and nearly solid in centre, cells mostly 12—25× 9—11 μ. Ch. alternate or about 5% opposite, antrorse or spreading, straight or slightly bent, 17—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. subglobose to piriform, entire, 13—17×11—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—22× 8—10 μ. Ms. numerous, straight, to 280×10—12 μ, apex 2—3-dentate to 15 μ, or with 2 branches to 10 μ and these 2—3-dentate. P. scattered, globose, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—50×16—18×12—14 μ.

On *Agonandra brasiliensis*, Argentina, Murier in SPEG 1820, type.

(815) *Meliola cansjerae* Hansf. & Thirum., Farlowia **3**: 290. 1948.

Cols. amphigenous, dense, velvety subcrustose, to 3 mm. diam., or numerous and confluent. Hyphae substraight, cells mostly 15—30× 7—8 μ. branching opposite, acute, densely reticulate and mearly solid in centre. Ch. alternate or to 15% opposite, spreading or antrorse-bent, 13—25 μ long; stc. cylindric, 3—8 μ long; hc. ovate, clavate or cylindric, entire, straight or bent, 10—17×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 20—25×7—9 μ. Ms. numerous, scattered, straight, to 280×9—10 μ, apex rarely simple and acute, mostly 2—3-dentate or furcate to 30 μ, branches denticulate. P. in central group, verrucose, to 195 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—47×15—18 μ.

On *Cansjera rheedii*, India, Thirumalachar s. n., 1945, type.

(816) *Meliola opiliae* Syd., Ann. Mycol. **11**: 327. 1913.

Cols. amphigenous, dense, velvety, 2—3 mm. diam. or confluent. Hyphae straight, cells mostly 15—20×7—9 μ, branching opposite, acute, densely reticulate and nearly solid in centre. Ch. opposite, more or less antrorse, straight or slightly bent, 13—18 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to clavate, entire, 10—14×9—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 17—20× 7—9 μ. Ms. numerous, rigid, straight, simple and obtuse, or 2—3-dentate to 10 μ, up to 280×9—11 μ. P. crowded, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—47×14—17 μ.

On *Opilia amentacea*, India, Fischer 6, McRae s. n. (Herb. Crypt. Ind. Or.), Thirumalachar, 1944; — On *Lepionurus oblongifolius*, India, „no. 56" in Herb. Kew.

(817) *Meliola opiliae* Syd. var. *singalensis* Hansf., Sydowia **9**: 70. 1955.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., dense, velvety. Hyphae straight, cells mostly 13—24×6—8 μ, branching opposite, acute, closely reticulate. Ch. alternate or to 90% opposite, subantrorse, straight or bent, 12—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose to piriform, entire, 10—15×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—23× 7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 600×9—10 μ. P. closely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—47× 16—17×13—15 μ.

On *Cansjera rheedii*, Ceylon, Thwaites 497 p. p., type (K).

(818) *Meliola champereiae* Syd., Ann. Mycol. **12**: 540. 1914.

Cols. amphigenous, mostly hypophyllous, to 4 mm. diam., velvety, dense. Hyphae substraight to wsinuous, cells mostly 20—30×7—9 μ, branching opposite, acute, closely reticulate. Ch. alternate or opposite in varying proportions, somewhat antrorse or spreading, straight or bent, 16—25 μ long; stc. cylindric or cuneate, 5—8 μ long; hc. ovate

to oblong or transverse, entire or rounded-angulose, 14—18×12—21 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—21×7—9 μ. Ms. numerous, straight, simple, acute, to 470×8—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricte, 38—44×14—18 μ.

On *Champereia manillana*, Philippines, PBS 236 (type), 23997, 39903 p. p., 12143 p. p., 21871, 36354, 34320; Sydow, Fung. exot. exs. 369; Petrak, Mycoth. gener. 1985; Formosa, Yamamoto.

Host Family 184. Octoknemataceae.

(819) *Meliola octoknematis* Deight., Sydowia 5: 7. 1951.
(3132.4322) — Cols. amphigenous, mostly epiphyllous, dense, to 3 mm. diam. Hyphae straight, cells mostly 12—16×7—8 μ, branching opposite at wide angles, densely reticulate. Ch. opposite, slightly antrorse, 13—19 μ long; stc. cylindric, 2—5 μ long; hc. cylindric to ovate, entire, straight or bent, 11—14×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—24×7—8 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, or sometimes slightly bent, to 500×10—11 μ, apex 2—4-dentate-cristate to 6 μ, or very rarely simple and acute. P. scattered, verrucose, to 200 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 44—50×21—22×14—15 μ.

On *Octoknema boreale*, Sierra Leone, Deighton 2629, type.

Host Family 185. Loranthaceae.

Synopsis of accepted species of *Meliolineae:*
Meliola

211×.422×	Cols. dense, subvelvety; hyphae substraight; hc. ovate, entire; ms. obtuse	*dendropemonis*	(820)
3133.6322	Cols. dense, subvelvety; hyphae undulate; hc. ovate to sublobate, large; ms. dentate or furcate to 20 μ	*loranthi*	(821)
3131.5321	Cols. dense, velvety; hyphae undulate to sinuous; hc. globose to calavate or angulose; ms. 1-2-dichotomous to 15 μ	*loranthi* var. *bangwensis*	(822)
3131.5332	Cols. dense, velvety; hyphae undulate; hc. ovate-oblong or angulose; ms. 2-3-furcate-criatate to 16 μ	*suisyaensis*	(823)
31⅓1.3222	Cols. thin, subvelvety; hyphae substraight; hc. subglobose to clavate, entire; ms. acute or 2-3-dentate, often torulose	*englerinae*	(823)
31½1.5222	Cols. dense, velvety; hyphae straight or sinuous; hc. ovate-oblong or sublobate; ms. straight or arcuate, acute	*arcuata*	(824)
3113.4221	Cols. dense, velvety, subcrustose; hyphae substraight; hc. ovate-globose; ms. acute ...	*glaziovii*	(825μ

3111.4231	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate or angulose; ms. obtuse ..	*visci*	(826)
3111.4221	Cols. thin; hyphae straight or undulate; hc. globose; ms. obtuse	*phthirusae*	(827)
3111.4221	Cols. dense, velvety; hyphae undulate to crooked; hc. small, globose-ovate; ms. obtuse	*biparasitica*	(828)
3111.3221	Cols. thin, subvelvety; hyphae undulate to crooked; hc. small, globose to ovate; ms. obtuse	*catubigensis*	(829)
	Doubtful species	*epiviscum*	(830)

(820) *Meliola dendropemonis* Petr. & Cif., Ann. Mycol. 28: 387. 1930.

Cols. amphigenous, to 5 mm. diam. or confluent. Hyphae straight or undulate, 7—10 μ thick, closely reticulate. Ch. alternate, 18—22 μ long; stc. short cylindric; hc. ovate, 10—13 μ broad. Mh. ampulliform, 15—18×7.5 μ. Ms. numerous, straight or slightly bent, simple. P. closely scattered, glabrous, to 200 μ diam. Sp. oblong, obtuse, 3-septate, slightly constricted, 36—42×14—15×12 μ.

On *Dendropemon parvifolius*, San Domingo, Ciferri 2378, type.

Authentic material of this species has not become available to the present author, and the above account is condensed from the original description.

(821) *Meliola loranthi* Gaill., Le Genre *Meliola*, p. 105. 1892.

Cols. epiphyllous, dense, to 3 mm. diam., subvelvety. Hyphae more or less undulate, cells mostly 20—30×7—9 μ, branching alternate or irregular, acute, closely radiating-reticulate. Ch. alternate or rarely opposite, straight or bent, 23—40 μ long; somewhat antrorse; stc. cylindric, 5—15 μ long; hc. versiform, ovate or rounded-angulose, or sublobate, rarely entire, straight or bent, 14—26×11—18 μ. Mh. few, mostly separate, opposite or alternate, ampulliform, 16—22×7—9 μ. Ms. scattered, erect, more or less straight, to 350×9—11 μ, apex usually 3-dentate to 10 μ, or the teeth elongate to 20 μ and each 2-dentate to 7 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 58—66×23—28 μ.

On *Loranthus* sp., Borneo, type (P); Uganda, Hansford 2110, 2821, with more frequent opposite Ch.; hc. always entire; sp. 58—63×19—73 μ.

(822) *Meliola loranthi* Gaill. var. *bangwensis* Hansf. & Deight., Mycol. Paper, IMI **23**: 40. 1948. (3131.5321)

Cols. amphigenous, to 4 mm. diam., dense, velvety. Hyphae undulate to sinuous, cells mostly 15—25×8—10 μ, branching alternate or irregular, not opposite, acute, very densely reticulate and nearly solid. Ch. alternate only, more or less closely antrorse, 21—28 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. clavate to subglobose, or sometimes rounded-angulose, 13—19×12—17 μ. Mh. few, mixed with ch., alternate, ampulliform. Ms. numerous, scattered, straight, to

240×9—11 μ, apex very shortly 1—2-dichotomous, 1-ry br. to 15 μ, 2-ry to 10 μ and often 2-dentate, widely divergent. P. closely scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—51×18—20 μ.

On *Loranthus bangwensis*, Gold Coast, Deighton CB 971 (type), 879; Sierra Leone, Deighton 2156; — On *L. leonensis*, Sierra Leone, Deighton 2007; — On *L. incanus*, Gold Coast, Hughes in IMI 42119; — On *L.* sp., Gold Coast. Hughes in IMI 42118, 42121, 42122, 42160.

(823) *Meliola suisyaensis* Yamam., Trans. Nat. Hist. Soc. Formosa **30**: 422, 1940.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 3 mm. diam. Hyphae undulate, branching alternate, acute to wide, densely radiating-reticulate, cells mostly 20—25×7—9 μ. Ch. alternate, straight or often bent, more or less antrorse, 20—30 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. subglobose, clavate or oblong, entire or angulose, often bent, 14—22×11—16 μ. Mh. mostly separate or mixed with few ch. on hyphae extending beyond the main colony, opposite or alternate, ampulliform, 18—23×7—8 μ. Ms. numerous, scattered, straight or slightly bent, to 360×9—10 μ, apex 3—4-cristate-dentate to 10 μ, or very shortly 2—3-furcate, the branches similarly cristate. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—56×19—23×16—18 μ.

On *Loranthus loniceriifolius*, Formosa, Yamamoto, type (USDA).

(823-a) *Meliola englerinae* Deighton, Sydowia **11**: 104. 1957.

Cols. hypophyllous or rarely also epiphyllous, thin, loosely velvety, to 10 mm. diam. or confluent. Hyphae substraight to slightly sinuous, branching opposite or alternate at wide angles, loosely reticulate, cells mostly 20—30×5—7 μ. Ch. alternate (rarely opposite), antrorse, straight, 14—19 μ long; stc. cylindric, 3—5 μ long; hc. subglobose, oblong or clavate, entire, 10—14×8—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—20×7—9 μ. Ms. scattered, straight, to 425×7—8 μ, acute or 2—3-dentate (—10 μ), often more or less closely tortuous and torulose above. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×14—15×12 μ.

On *Englerina parviflora*, Sierra Leone, Deighton 5929 in IMI 57261-b, type.

(824) *Meliola arcuata* Doidge, Trans. Roy. Soc. South Africa **5**: 737. 1917.

Cols. on cladodes, dense, velvety, to 2 mm. diam. Hyphae straight to sinuous, cells mostly 10—20×10—11 μ, branching opposite or irregular, acute, densely reticulate and nearly solid. Ch. alternate, spreading or antrorse, straight or bent, 18—30 μ long; stc. cylindric or cuneate, 3—10 μ long; hc. ovate to oblong, entire, rounded-angulose

or sublobate, straight or bent, 12—21×10—14 μ. Mh. separate, not numerous, opposite or alternate, ampulliform, 13—20×7—10 μ. Ms. numerous, simple, acute, arcuate, flexuous or almost straight, to 350×7—11 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to narrowly ellipsoid, obtuse, 4-septate, slightly constricted, 50—54× 14—16 μ.

On *Viscum anceps*, South Africa, PRET 2364, 8389.

(825) *Meliola glaziovii* Hansf., Sydowia Beih. **1**: 109. 1957.

Cols. epiphyllous, dense, velvety, subcrustose, to 3 mm. diam. Hyphae substraight, branching opposite, acute to wide, densely reticulate and becoming nearly solid, cells mostly 20—30×7—9 μ. Ch. opposite or alternate, antrorse, straight or slightly bent, 14—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to subglobose, entire, 10—15×8—13 μ. Mh. rare, mixed with ch., opposite or alternate ampulliform, 15—22×8—9 μ. Ms. very numerous, straight, simple, abruptly acute, to 300×8—10 μ. P. closely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—48× 18—20 μ.

On *Loranthaceae* indet., Brazil, Glaziou 22710 (BRUX).

(826) *Meliola visci* Stev., Bull. Bishop Mus. **19**: 38. 1935.

Cols. caulicolous, to 2 mm. diam. or confluent, very dense, shortly velvety. Hyphae substraight or undulate, cells mostly 25—40×8—9 μ, branching alternate, opposite or irregular, acute, very densely radiating-reticulate, becoming almost solid. Ch. alternate, antrorse or spreading, straight or bent, 20—35 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. globose, ovate or truncate to rounded-angulose, straight or bent, sometimes transverse, 15—24×11—17 μ. Mh. mixed with ch., alternate, ampulliform, 20—25×8—11 μ. Ms. very numerous, closely scattered, straight or somewhat curved, simple, obtuse, to 170× 9—11 μ. P. closely crowded, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—49×17—20 μ, middle cell sometimes the largest.

On *Viscum articulatum*, Hawaii, Stevens 167, type, 1149. (FLS).

(827) *Meliola phthirusae* Hansf., Sydowia **10**: 84. 1957.

(3111.4221)

Cols. mostly epiphyllous, to 5 mm. diam., thin. Hyphae straight to undulate, cells mostly 20—40×6—7 μ, branching opposite, acute to wide, loosely reticulate, closer in centre. Ch. alternate, antrorse, usually straight, 12—14 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. globose, entire, 10—12 μ diam. Mh. separate, opposite or alternate, ampulliform, 14—18×8—9 μ. Ms. mostly grouped around P., substraight, simple, obtuse, to 250×7—8 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×13—15 μ.

On *Phthirusa pyrifolia*, Venezuela, Chardon & Toro 524, type (CUP).

(828) *Meliola biparasitica* Cif., Ann. Mycol. **36**: 205. 1938.

Cols. amphigenous, dense, velvety, to 2 mm. diam., or widely confluent. Hyphae undulate to crooked, cells mostly 15—25×5—7 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, often bent, antrorse or spreading, 12—19 μ long; stc. cylindric or cuneate, 3—6 μ long; hc. globose, ovate or piriform, entire or sometimes rounded-angulose and slightly irregular, often bent, 10—15× 10—13 μ. Mh. mostly on separate hyphae, opposite, alternate or sometimes ternate, ampulliform, 15—20×6—9 μ. Ms. numerous, more or less straight, simple, obtuse, to 300×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—41× 14—16×12—13 μ.

On *Loranthaceae* indet., San Domingo, Ciferri, Mycofl. doming. exs. 287, type.

(829) *Meliola catubigensis* Yates, Philipp. Journ. Sci., C, Botany, **12**: 363. 1917.

Cols. amphigenous, rather thin, subvelvety, to 8 mm. diam. or widely confluent. Hyphae substraight, crooked on lower surface, cells mostly 20—30×6 μ, branching opposite, acute, loosely reticulate. Ch. alternate, more or less antrorse, straight, 12—20 μ long; stc. cuneate or cylindric, 2—6 μ long; hc. globose to ovate, entire, 9—13× 8—11 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15— 23×7—9 μ, neck elongate. Ms. thinly scattered, and grouped around P., straight or slightly flexuous, simple, obtuse, to 300×7—8 μ. P. scattered, verrucose, to 120 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—34×10—12 μ.

On *Loranthus* sp., Philippines, PBS 24624, type.

(830) *Meliola epiviscum* Cif., Mycopathologia **7**: 125. 1954.

Cols. usually epiphyllous, black, diffuse, often marginal, to 5 mm. diam., when dry indistinct. Hyphae dark, loosely interwoven, irregularly branched, straight or flexuous, septate, 5—6 μ wide. Hyphopodia very few, usually unilateral, rarely alternate, single, cylindric, elliptic or ovoid, simple, without basal cell, 6—8×10—12 μ or 9—11 μ diam. Mh. none. Setae none. P. few, black, hard, collapsing when dry, 90—120 μ diam.; asci evanescent. Sp. brown, usually 4-septate, rarely 3-septate, constricted, ellipsoid to cylindric, 46—56×13—16 μ.

On *Dendrophthora biseriata*, San Domingo, Ekman s. n., type.

Material of this species has not been available to the present author, who is of the opinion that if the description of mycelium and hypopodia is accurate, then the *Meliola* spores described do not belong to it. Not one species of *Meliola* is known without true capitate hypopodia, i. e. consisting each of stipe cell and head cell. Ciferri's „species" must be regarded as extremely doubtful, until at least it can be

revised both from the type collection and from further collections on the same host in San Domingo.

Host Family 186. Santalaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.6440	Cols. dense, subcrustose; hyphae undulate to crooked; hc. globose-ovate or angulose	*megalospora*	(831)

Meliola

3133.4232	Cols. dense, velvety; hyphae straight to undulate; hc. oblong-ovate, entire; ms. bifid to 60 μ, br. often 2-dentate	*bifida*	(832)
3111.5241	Cols. dense, velvety; hyphae crooked; hc. globose, entire; ms. obtuse	*exocarpi*	(833)
3111.5231	Cols. subdense; hyphae straight to undulate; hc. ovate-clavate, entire; ms. obtuse or acute	*osyridis*	(834)
3111.4221	Cols. dense, velvety; hyphae substraight; hc. ovate- clavate; ms. obtuse	*osyridis* var. *karamojensis*	(835)
3111.5331	Cols. dense, velvety; hyphae substraight; hc. ovate-clavate; ms. obtuse	*osyridicola*	(836)

(831) **Asteridiella megalospora** (Speg.) Hansf., comb. n.

= *Meliola negalospora* Speg., Anal. Soc. Cienc. Argentina, 22: 115. 1881.

= *Irene megalospora* (Speg.) Theiss. & Syd., Ann. Mycol. 15: 461. 1917.

= *Meliolina megalospora* (Speg.) Stev., loc. cit. 25: 416. 1927.

Cols. hypophyllous, dense, subcrustose, smooth, to 3 mm. diam. Hyphae undulate to crooked, branflhing opposite or irregular, acute, densely reticulate and almost solid, cells mostly 25—40×9—10 μ. Ch. alternate or more scattered, few in some cloonies, usually bent, antrorse or spreading, 35—55 μ long; stc. cuneate to cylindric, 7—30 μ long; hc. globose, ovate, or oblong, entire or slightly angulose, 20—30×12—20 μ. Mh. mixed with ch., in some colonies few, in others predominating, opposite or alternate, ampulliform, 20—32×8—11 μ. Setae none. P. in close central group, globose, verrucose, to 400 μ diam., surface cells rounded or obtusely conoid, to 10 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 65—70×30—32 μ (Spegazzini: —70—80×25—32 μ).

On *Iodina rhombifolia*, Argentina, Spegazzini (FLS), type.

(832) *Meliola bifida* Cooke, Grevillea 9: 15. 1880.

Cols. mostly caulicolous, also amphigenous, dense, velvety. Hyphae straight to undulate, cells mostly 15—25×7—8 μ, branching opposite, acute, closely radiating-reticulate. Ch. opposite or alternate, straight or bent, more or less antrorse, 15—18 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate to oblong, entire, 11—15×7—10 μ.

Mh. mixed with ch., opposite or alternate, ampulliform, 12—17 × 8—9 μ. Ms. very numerous, to 350 × 8—10 μ, straight, bifid at apex, vranches spreading, to 60 μ long, acute or 2-dentate to 8 μ. P. scattered, berrucose, to 300 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—50 × 15—19 μ.

On *Osyridicarpus natalensis*, South Africa. PRET 9020, 12326, 12443, 14956.

(833) *Meliola exocarpi* Yates, Philipp. Journ. Sci., C. Botany, **13**: 368. 1918.

Cols. amphigenous, dense, velvety, to 4 mm. diam. or confluent. Hyphae crooked, cells mostly 30—50 × 6—8 μ, branching irregular, acute, densely interwoven-reticulate and becoming almost solid. Ch. alternate or more scattered, antrorse, spreading or retrorse-bent, often irregularly bent, 20—60 μ long; stc. cylindric, 6—40 μ long, often bent; hc. globose, entire, 13—20 × 13—10 μ. Mh. very few, mixed with ch., ampulliform, 20—24 μ long, alternate. Ms. very numerous, straight, simple, obtuse, to 300 × 10—12 μ, slightly attenuate upwards. P. scattered, verrucose, to 380 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 48—55 × 17—20 × 14—16 μ.

On *Exocarpus latifolius*, Philippines, PBS 27846, type.

(834) *Meliola osyridis* Doidge, Bothalia **2**: 462. 1928.
= *Meliola polytricha* K. & C. var. *abyssinica* P. Henn., Bull. Herb. Boisser **1**: 117. 1893.

Cols. amphigenous, mostly hypophyllous, to 3 mm. diam. or confluent, subdense, thinly velvety. Hyphae substraight to undulate, cells mostly 10—20 × 6—8 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, more or less closely antrorse, 20—34 μ long, straight or bent; stc. cylindric to cuneate, 8—15 μ long; hc. ovate, cylindric or clavate, entire, rounded or slightly pointed at apex, 11—22 × 9—14 μ. Mh. rather numerous, separate, opposite, ampulliform, 15—17 × 3—10 μ. Ms. fairly numerous, simple, straight or slightly flexuous, to 350 × 7—8 μ, apex obtuse or acute. P. in central group, verrucose, to 250 μ diam., surface cells convex to conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—53 × 17—20 μ.

On *Osyris compressa*, South Africa, PRET 20771, 10359, 10954, 12187; — On *O. abyssinica*, Eritrea, Schweinfurth (type of *M. polytricha* var. *abyssinica*) (S); Tanganyika, Volkens 2272 (BRUX); — On *Rhoiocarpus capensis*, South Africa, PRET 10866, 10963, 12349, 12374, 17253.

(835) *Meliola osyridis* Doidge var. **karamojensis** Hansf., comb. n.
= *Meliola karamojensis* Hansf., Proc. Linn. Soc. London **158**: 32. 1946.

Cols. amphigenous, dense, to 1 mm. diam. Hyphae undulate to substraight, cells mostly 20—30 × 7—9 μ, branching usually alternate,

acute, densely radiating-reticulate. Ch. alternate, antrorse-bent, 20—30 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. ovate to clavate, entire, rounded at apex, 12—18×9—12 μ. Mh. not seen. Ms. few, mostly grouped around P., straight, simple, acute, to 250×7—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. subellipsoid, obtuse, 4-septate. deeply constricted, 38—42×13—16 μ, the middle cell largest.

On *Osyris abyssinica*, Uganda, Hansford 2687, type.

(836) *Meliola osyridicola* Hansf., Proc. Linn. Soc. London **157**: 184. 1946.

Cols. amphigenous and caulicolous, dense, velvety, subcrustose, to 1 mm. diam. Hyphae substraight to slightly undulate, cells mostly 15—20×7—10 μ, branching opposite. acute or wide, very densely interwoven-reticulate and radiating, forming almost a solid plate. Ch. alternate, antrorse, 18—30 μ long, straight or bent; stc. cylindric or cuneate, 6—14 μ long; hc. ovate to clavate, entire, broadly rounded at apex, 13—17×9—12 μ. Mh. few, mixed with ch., alternate, rarely opposite, ampulliform. Ms. closely scattered and grouped around P., numerous, to 240×8—9 μ, straight, simple, obtuse to subacute. P. in close central group, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 44—53×16—21 μ, the middle cell often slightly the largest.

On *Osyris arborea*, India, Krishnaswamy s. n. in Herb. Crypt. Ind. Or., type.

Host Family 190. Rhamnaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.5330	Cols. thin; hyphae crooked; hc. angulose to lobate; app. to 50 μ, obtuse	*splendens*	(837)

Irenopsis

3¾01.4220	Cols. thin; hyphae straight; hc. ovate-clavate, entire; ps. 4—15, straight or bent, obtuse, to 90 μ	*tenuissima*	(838)
3¾01.3220	Cols. thin; hyphae substraight to undulate; hc. angulose to lobate; ps. to 40 μ, straight or uncinate, obtuse	*scutiae*	(839)

Asteridiella

3101.3220	Cols. thin; hyphae straight or crooked; hc. globose-ovate; P-cells conoid to 12 μ high	*colubrinae*	(840)

Meliola

2111.4232	Cols. subdense, velvety; hyphae undulate; hc. irregularly lobate; ms. subacute	*pomaderridis*	(841)
3131.3221	Cols. thin; hyphae straight to undulate; hc. ovate-oblong, entire; ms. 2-4-dentate	*maesopsidis*	(842)

3133.4232	Cols. dense, crustose; hyphae substraight; hc. subglobose to oblong, entire; ms. obtuse or 3-dentate to 18 μ	*tridentata*	(843)
31⅓3.3221	Cols. dense, subcrustose; hyphae straight; hc. oblong-clavate, entire; ms. acute or dentate	*scutiae*	(844)
31⅓3.4222	Cols. thin; hyphae straight; hc. ovate; ms. acute or dentate	*condaliae*	(845)
31⅓3.4222	Cols. thin; hyphae undulate; hc. globose; ms. obtuse or dentate	*rhamnicola*	(846)
31⅓3.3221	Cols. thin; hyphae straight to undulate; hc. subglobose, entire; ms. obtuse or dentate, often torulose above	*gouaniea*	(847)
3123.5232	Cols. dense, crustose; hyphae substraight to undulate; hc. globose-piriform, entire; ms. flexuous to subuncinate, obtuse	*emmenospermatis*	(848)
31½1.4232	Cols. thin, subvelvety; hyphae undulate; hc. ellipsoid to lobate; ms. straight or uncinate	*ventilaginis*	(849)
3113.5233	Cols. dense, velvety; hyphae substraight; hc. subglobose to piriform; ms. acute	*colletiae*	(849)
3113.4221	Cols. thin to subdense; hyphae straight; hc. subglobose, entire; ms. acute	*ventilaginicola*	(850)
3111.3223	Cols. thin, subvelvety; hyphae straight or undulate; hc. ovate-oblong, entire; ms. subacute to obtuse	*krugiodendri*	(851)
3111.3222	Cols. thin, subvelvety; hyphae straight or undulate; hc. oblong-clavate; ms. acute	*zizyphi*	(852)

(837) **Appendiculella splendens** (Stev.) Hansf., comb. n.

= *Irene splendens* Stev., Bull. Bishop Mus. **19**: 41. 1925.

Cols. hypophyllous, to 6 mm. diam., thin, smooth. Hyphae crooked, cells mostly 30—45×5—7 μ, loosely reticulate, branching irregular. Ch. alternate or more scattered, 18—50 μ long; usually irregularly bent, spreading; stc. cylindric, crooked, 5—20 μ long; hc. versiform, straight or bent, irregularly angular to lobate, 14—25× 10—19 μ. Mh. not seen. P. scattered, rough, to 300 μ diam., surface cells conoid, or produced into clear brown, transversely striate, thin-walled appendages, to 50 μ high, obtuse, sometimes bent at the apex. Sp. oblong, obtuse, 3-septate, usually deeply constricted at middle septum, 47—55×21—24 μ.

On *Alphitonia* sp., Hawaii, Stevens 430, type (FLS).

(838) *Irenopsis tenuissima* Stev., Ann. Mycol. **25**: 439. 1927.

= *Meliola tenuissima* Stev., Illinois Biol. Monogr. **2**: 24. 1916.

Cols. epiphyllous, thin, to 4 mm. diam., smooth. Hyphae straight, cells mostly 25—35×6 μ, branching opposite, acute, loosely reticulate. Ch. alternate or more scattered, spreading or subantrorse, straight or slightly bent, 14—22 μ long; stc. cylindric, 4—9 μ long; hc. globose to ovate, entire or slightly angulose, 9—15×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. P. loosely scattered, verrucose, to 165 μ diam.; ps. 3—6, straight below, variously

bent at obtuse to slightly clavulate apex, smooth, dark brown, 2—3-septate, to 130×6—7 μ. Sp. oblong, obtuse, 4-septate, constricted, 32—37×12—14 μ.

On *Gouania lupuloides*, Porto Rico, Stevens 3142 (type), 96; San Domingo, Ciferri 3022; — On *G. longispicata*, Uganda, Hansford 2253, 2445, 2681, 3029, 3319; — On *G. longispetala*, Sierra Leone, Deighton 2220, 1047, 2168; — On *G. leptostachya*, Java, BO 12335; — On *G. polygama*, San Domingo, Ciferri 2810.

(839) *Irenopsis scutiae* Hansf., Proc. Linn. Soc. London **157**: 169. 1948.

Cols. amphigenous, thin, to 9 mm. diam. or confluent. Hyphae straight or slightly undulate, cells mostly 30—40×6—8 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 18—25 μ long; stc. cuneate, 5—9 μ long; hc. irregularly rounded-angulose to sublobate, 10—16×12—15fμ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—21×7—9 μ. P. scattered, rough, to 150 μ diam., surface cells mammillate, or produced into straight or bent, obtuse setae, up to 40×9—12 μ. Sp. subellipsoid, obtuse, 4-septate, constricted, 35—39×14—17 μ.

On *Scutia myrtina*, Uganda, Hansford 2602 (type), 3428.

(840) *Asteridiella colubrinae* (Stev.) Hansf., Sydowia **10**: 47. 1957.

= *Irenina colubrinae* Stev., Ann. Mycol. **25**: 451. 1927.

Cols. amphigenous, to 3 mm. diam., thin. Hyphae on upper surface straight, sinuous below, cells mostly 20—30×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or more scattered, spreading or antrorse, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. globose to ovate, entire, 11—14×11—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—7 μ. P. scattered, each on radiate subiculum, verrucose, to 130 μ diam., surface cells rounded to conoid, to 15 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—39×13—15 μ.

On *Colubrina rufa*, Panama, Stevens 173, 1197. (FLS).

(841) *Meliola pomaderridis* Hansf., Proc. Linn. Soc. London **157**: 179. 1946.

Cols. epiphyllous, subdense, velvety, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×7—9 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate, spreading or antrorse, often bent, 26—35 μ long; stc. cylindric to cuneate, 7—16 μ long; hc. versiform, very irregularly lobate and often bent, 18—23×12—20 μ . Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, scattered, substraight, to 350×9—10 μ, attenuate to subacute apex 2—3 μ wide. P. scattered, verrucose, to 220 μ diam. Sp. bent ellipsoid, obtuse, 3-septate, slightly constricted, 41—48×16—17 μ.

On *Pomaderris apetala*, Tasmania, Rodway 933, type; Victoria Fraser 194; New South Wales, Fraser 155.

(842) *Meliola maesopsidis* Hansf., Proc. Linn. Soc. London **158**: 33. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 15—20×6 μ, branching opposite, at wide angles rather closely reticulate. Ch. alternate, somewhat antrorse, straight or slightly bent, 14—19 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to clavate, entire, 9—13×6—8 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15—20×7—8 μ. Ms. mostly grouped around P., thinly scattered on mycelium, straight, to 220×7—8 μ, apex rarely simple and obtuse, usually 2—4-dentate to 12 μ. P. loosely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×13—16 μ.

On *Maesopsis eminii*, Uganda, Hansford 3662, type.

(843) *Meliola tridentata* Hansf., Sydowia **9**: 25. 1955.

Cols. amphigenous, dense, crustose, to 2 mm. diam. or confluent, velvety, easily secedent. Hyphae substraight, cells 20—30×6—9 μ, branching opposite at wide angles, densely interwoven-reticulate. Ch. alternate or to 90% opposite, spreading, straight or bent, 13—18 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. globose to shortly cylindric-clavate, entire, 10—13×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—20×6—9 μ. Ms. very numerous, straight, to 330×9—11 μ, apex rarely simple and obtuse, usually 3-dentate to 18 μ. P. scattered, verrucose, to 225 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—48×16—18×14—15 μ.

On *Scutia arenicola*, Brazil, Ule, Herb. brasil. 2263 (type) (S).

(844) *Meliola scutiae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 1342. 1912.

Cols. epiphyllous, subcrustose, velvety, dense, to 3 mm. diam. Hyphae straight, branching opposite, subrectangular, becoming densely reticulate, cells mostly 12—20×5—7 μ. Ch. alternate or opposite in varying proportions, spreading or antrorse, straight or slightly bent, 12—21 μ long; stc. cylindric or cuneate, 3—6 μ long; hc. cylindric to slightly clavulate, entire, often bent, 11—17 ×6—8μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Ms. mostly grouped around P., straight, simple, acute, to 300×7—10 μ, or sometimes 2-dentate to 7 μ. P. scattered, or in loose central group, verrutoce, to 200 μ diam. Sp. not seen (Spegazzini: subcylindric, obtuse, 4-septate, constricted, 36—38×16 μ).

On *Scutia buxifolia*, Argentina, SPEG 518, type.

(845) *Meliola condaliae* Stevenson, Mycologia **38**: 527. 1946.

Cols. amphigenous, mostly epiphyllous, rarely on young twigs, 2—3 mm. diam., thin to dense, subvelvety, often widely confluent. Hyphae substraight, branching opposite or irregular, acute to wide,

closely reticulate, cells mostly 15—25×6—8 μ. Ch. alternate or, especially on hyphae where mixed with Mh., opposite, subantrorse or spreading, straight or slightly bent, 10—18 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to oblong, entire, usually straight, 8—12×6—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×5—8 μ. Ms. scattered and grouped around P., straight or slightly flexuous, simple and acute or rarely 2-dentate to 12 μ, to 400×7—9 μ. P. scattered or subaggregate, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—47×15—18×12—15 μ.

On *Condalia obovata*, Texas, U. S. A., Runyon 3663 (type), Hansel 57475 (USDA).

(846) *Meliola rhamnicola* Stev. & Tehon, Mycologia **18**: 14. 1926.

Cols. hypophyllous, thin, to 15 mm. diam. Hyphae undulate, branching opposite or irregular, acute or wide, loosely reticulate, cells mostly 25—35×6—7 μ. Ch. alternate or to 2% opposite, spreading or subantrorse, straight or slightly bent, 12—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to ovate, entire, often slightly bent, 9—13×7—11 μ. Mh. mixed with ch., opposite or alternate ampulliform, 17—22×7—8 μ, neck elongate. Ms. scattered and grouped around P., straight or flexuous, obtuse or irregularly dentate to 10 μ, to 450×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, often slightly bent, 4-septate, slightly constricted, 39—50×12—13×11 μ.

On ? *Gouania* sp., British Guiana, Stevens 203, type (FLS).

Stevens gave the spores as 25—28×12—14 μ, either a printer's error, or due to having obtained the wrong spores; those described above came from mature perithecia, and correspond with those originating the colonies.

(847) *Meliola gouaniae* Hansf., Proc. Linn. Soc. London **157**: 22. 1945.

Cols. epiphyllous, very thin, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 25—30×5—6nμ, branching opposite at wide angles, loosely reticulate. Ch. mostly alternate, but some opposite, spreading or subantrorse, straight or slightly bent; stc. cylindric, 2—3 μ long; hc. subglobose to oblong, entire, 6—10×7—9 μ, rarely to 14 μ long. Mh. numerous, mixed with ch., opposite or alternate, to 25×6 μ, narrowly ampulliform with long neck. Ms. mostly grouped around P., straight, simple, obtuse, often slightly torulose above, to 200×7—8 μ (in West African specimens often dentate to 7 μ). P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—33×11—12 μ.

On *Gouania longispicata*, Uganda, Hansford 3318, type; — On *G. longipetala*, Sierra Leone, Deighton 2220, 2168, 1047; On *G. leptostachya*, Java, BO 12335.

This usually occurs mixed with *Irenopsis tenuissima*.

(848) *Meliola emmenospermatis* Hansf., Proc. Linn. Soc. N. S. W., **78**: 71. 1953.

Cols. hypophyllous, dense, to 5 mm. diam. or confluent, subcrustose. Hyphae substraight to undulate, cells mostly 15—25× 7—8 μ, branching opposite, wide, closely reticulate and solid in chentre. Ch. alternate or about 3% opposite, more or less antrorse, straight or bent. 13—24 μ long; stc. cylindric. 3—10 μ long; hc. subglobose to piriform, entire, 10—17×7—11 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. numerous, irregularly flexuous or subuncinate, simple, obtuse, to 450×8—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55×17—19×14—16 μ.

On *Emmenosperma alphitonioides*, New South Wales, Fraser 212, type.

(849) *Meliola ventilaginis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 27. 1941.

Cols. hypophyllous, thin, more or less velvety, to 15 mm. diam., or sometimes widely confluent. Hyphae more or less undulate, cells 23—51×7—8 μ, branching opposite or irregular, loosely reticulate. Ch. alternate or more scattered, often bent to flexuous, 27—40 μ long; stc. cylindric to cuneate, 12—23 μ long; hc. angulose to lobate, 14—20×9—16 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 16—35×7—9 μ. Ms. numerous, scattered, simple, subacute, straight or mostly uncinate, to 360×9—10 μ. P. in cenrtal group, verrucose, to 225 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 39—48×12—16 μ.

On *Ventilago elegans*, Formosa, Yamamoto, type. (not seen by present author).

(849-a) **Meliola colletiae** Hansf., sp. n.

Plagulae caulicolae, densae, velutinae, usque ad 3 mm. diam. Hyphae brunneae, subrectae, opposite vel irregulariter lateque ramosae, dense reticulatae, cellulis plerumque 15—22×7—9). Hyphopodia capitata opposita vel alternata, plus minusve antrorsa, recta vel curvata, 16—26 μ longa; cellula basali cylindracea vel cuneata, 4—9 μ longa; cellula apicali subglobosa vel piriformi, integra, saepe curvata, 11—17×10—13 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 18—24×8—10 μ. Setae myceliales dispersae, rectae vel leniter flexuosae, simplices, acutae vel subacutae, usque ad 540×10—13 μ. Perithercia dispersa, atra, globose, verrucosa, usque ad 250 μ diam. Sporae atrobrunneae, oblongae, obtusae, 4-septatae, constrictae, 48—54×15—17 μ.

Hab. in caulibus *Colletiae* (? *spinosae*), Concepcion, Chile, Thaxter 7417 (typus in Herb. Farlow.).

(850) *Meliola ventilaginicola* Hansf., Proc. Linn. Soc. London **157**: 180. 1946.

Cols. amphigenous, on upper surface subdense, thinner below, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 20—35× 6—7 μ, branching opposite, at wide angles, loosely to closely reticulate. Ch. opposite or alternate, straight or slightly bent, antrorse or spreading, 14—19 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to piriform, entire, 10—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. scattered, straight, simple, acute, to 280×6—8 μ. P. scattered, each on a radiate subiculum, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—41×12—15 μ.

On *Ventiiago africana*, Uganda, Hansford 2921 (type), 2933, 3327, 3420, 3572.

(851) *Meliola krugiodendri* Ciferri, Ann. Mycol. Berlin 36: 213. 1938.

Cols. amphigenous, thin, to 4 mm. diam., thinly velvety. Hyphae flexuous to undulate, cells mostly 25—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or less than 1% opposite, more or less antrorse, usually straight, 17—24 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. ovate to cylindric, entire, apex broadly rounded to somewhat pointed, 12—16×8—10 μ. Mh. usually separate, alternate, opposite or sometimes ternate, ampulliform to conoid, 12—20×7—10 μ. Ms. thinly scattered, and grouped around P., straight or slightly flexuous, simple, subacute to obtuse, to 600×7—9 μ, apex about 3 μ thick. P. loosely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—38× 14—17 μ.

On *Krugiodendron ferreum*, San Domingo, Ciferri, Mycofl. doming. exs. 273 (type), 200-bis; Porto Rico, Stevens 814, 5021, 831, 7266, 7895, 8594, 9247.

(852) *Meliola zizyphi* Hansf. & Thirum., Farlowia **3**: 299. 1948.

Cols. epiphyllous, thin, thinly velvety, to 3 mm. diam. or confluent. Hyphae substraight to sinuous, cells mostly 20—30×5—6 μ, branching opposite, subrectangular, loosely reticulate. Ch. alternate or to 5% opposite, spreading, often reflexed-bent, 10—17 μ long; stc. cylindric, 2—6 μ long; hc. cylindric-clavate, often bent, entire, 8—12× 7—9 μ. Mh. mixed with ch., opposite, alternate or solitary, ampulliform, 13—19×5—7 μ. Ms. scattered thinly, simple, acute, straight or slightly flexuous to 400×6—7 μ. P. loosely scattered verrucose to 140 μ diam. Sp. oblong to subellipsoid obtuse, 4-septate, 30—36× 11—14 μ.

On *Zizyphus rugosa*, India, Thirumalachar 850, type.

(?) On Z. sp., Philippines, PBS 29156 (incomplete, no setae or perithecia seen).

Host Family 191. Elaeagnaceae.

(853) *Meliola elaeagni* Hansf. & Thirum., Farlowia 3: 292. 1948. (3111.3223) — Cols. amphigenous, to 8 mm. diam. or confluent, thin. Hyphae sinuous, cells mostly 20—25×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate straight or bent, spreading or antrorse, 12—23 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose, clavate or slightly angulose, straight or bent, usually entire, 9—15×9—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—18×7—9 μ. Ms. scattered, few to numerous, straight, simple, acute, to 600×8—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 34—40×13—17 μ.

On *Elaeagnus latifolia*, India. Thirumalachar s. n., 1944, type.

Host Family 193. Vitaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4330	Cols. dense, subcrustose; hyphae undulate; hc. globose	*leeae*	(854)

Irenopsis

3403.3220	Cols. thin; hyphae sinuous; hc. angulose; ps. 9—15, acute, to 160 μ	*leeae*	(855)
3401.3220	Cols. dense; hyphae sinuous;hc. angulose; ps. 0—6, acute, to 130 μ long	*leeae* var. *javensis*	(856)

Asteridiella

3101.3220	Cols. subdense; hc. globose to ovoid	*perspicua*	(857)
3101.3220	Cols. dense; hyphae substraight; hc. globose-oblong	*leeicola*	(858)
2111.5232	Cols. thin, subvelvety; hyphae crooked; hc. irregular, lobate; ms. acute	*cissi-antarctica*	(859)
2111.3221	Cols. thin, subvelvety; hyphae crooked; hc. subglobose-ovate or angulose; ms. obtuse to subacute	*cissi-repandae*	(860)
3413.3221	Cols. dense, velvety; hyphae crooked; hc. subglobose, entire; ms. 2-dichotomous	*cissi-caesiae*	(861)
3141.4231	Cols. dense, velvety; hyphae straight to undulate; hc. globose to angulose; ms. 2-3-furcate to 20 μ, br. dentate	*furcata*	(862)
3143.5332	Cols. dense, velvety; hyphae crooked; hc. angulose-lobate; ms. 2-3-dichotomous to 50 μ	*furcata* var. *major*	(863)
3141.4221	Cols. dense, velvety; hyphae substraight; hc. globose to angulose; ms. cristate-furcate to 20 μ	*furcata* var. *ugandensis*	(864)
3141.4221	Cols. dense, velvety; hyphae crooked; hc. elongate, entire or angulose; ms. 2-3-dichotomous to 50 μ	*vitis*	(865)

3133.4223	Cols. thin, subvelvety; hyphae undulate hc. clavate-piriform, entire; ms. dentate to 30 μ..	*cissi*	(866)
3113.4222	Cols. dense, subvelvety; hyphae substraight; hc. subglobose to clavate, entire; ms. acute ..	*bakeri*	(867)
3111.4222	Cols. subdense, subvelvety; hyphae sinuous; hc. globose-ovate, entire; ms. obtuse.....	*corazoyensis*	(837)
3111.3221	Cols. thin; hyphae coroked; hc. ovate, entire; ms. obtuse	*cissi-rhombifoliae*	(868)
3111.3221	Cols. thin; hyphae sinuous; hc. ovate to subglobose; ms. obtuse	*cissi-productae*	(869)

(854) *Amazonia leeae* Hansf. & Thirum., Farlowia **3**: 287. 1948.

Cols. mostly epiphyllous, dense, subcrustose, to 1 mm. diam. Hyphae undulate, cells mostly 10—15×7—9 μ, branching alternate or unilateral, radiating-reticulate and almost solid. Ch. alternate, antrorse, usually straight, 12—16 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. globose, entire, 10—12 μ diam. Mh. not seen. P. flattened-globose beneath a radiate mycelial covering, to 260 μ diam. and about 100 μ high in centre, scattered or aggregate and sometimes laterally connate. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 39—45×17—21 μ.

On *Leea macrophylla*, India, Thirumalachar 867, type.

(855) *Irenopsis* ïeeae Hansf., Journ. Linn. Soc. London **51**: 268. 1937.

Cols. hypophyllous, thin, to 3 mm. diam. or confluent. Hyphae undulate to sinuous, cells mostly 17—25×6—8 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. mostly opposite, in groups separated by intervals devoid of hyphopodia, antrorse or spreading, straight or slightly bent, 15—20 μ long; stc. 2—6 μ long; cylindric to cuneate; hc. ovate to clavate or subglobose, entire or often rounded-angulose to sublobate, 11—15×11—20 μ. Mh. numerous, mixed with ch., or mostly in intervals between the groups of ch., opposite or alternate, ampulliform, 14—23×7—10 μ. P. scattered, verrucose, to 160 μ diam.; ps. 9—15, erect, somewhat incurved, simple, acute, septate, to 160×7—9 μ. Sp. oblong to ellipsoid, obtuse, 4-septate. slightly constricted, 31—35×12—14 μ.

On *Leea guineensis*, Uganda, Hansford 1342, type; Gold Coast, Hughes in IMI 42191, 42192.

(856) *Irenopsis leeae* Hansf. var. *javensis* Hansf., Reinwardtia **3**: 110. 1954.

Cols. epiphyllous, to 1 mm. diam., dense, smooth. Hyphae rather crooked, cells mostly 15—20×7—8 μ, branching close, opposite at wide angles, closely reticulate and almost solid in centre. Ch. alternate or less than 1% opposite, in less conspicuous groups than in the type, antrorse or spreading, usually straight, 13—20 μ long; stc. cylindric or cuneate, 2—6 μ long; hc. globose, entire to angulose or slightly

irregular, 9—15×10—16 μ. Mh. mixed with ch., numerous, alternate or opposite, ampulliform, 16—22×7—9 μ. P. closely scattered, verrucose, to 150 μ diam.; ps. 0—6, erect-spreading, straight to slightly flexuous or incurved, simple, acute, 2—3-septate, smooth, to 130×7—9 μ, wall 2—3 μ thick. Sp. ellipsoid, obtuse, 4-septate, constricted, 30—35×14—15 μ.

On *Leea aquatica*, Java, BO 12345, type; — On *L. philippinensis*, Philippines, Stevens 1891 (FLS).

(857) **Asteridiella perspicua** (Cif.) Hansf., comb. n.

= *Meliola (Irenina) perspicua* Cif., Mycopathologia 7: 171. 1954.

Cols. epiphyllous, rounded to irregular, sub-confluent, 1—4 mm. diam. Hyphae interwoven, septate, branched at nearly right angles, 7—9 μ thick. Ch. alternate or unilateral, numerous; stc. 3—4 μ long; hc. globose to ovoid, 15—18 μ diam., or 18—22×12—14 μ. Mh. numerous, ampulliform, 15—18×7—8 μ. Setae none. P. depressed-globose, to 125 μ diam., with deeply incised-lobate margin. Sp. ellipsoid to ovoid or cylindric, 4-septate, slightly constricted, 35—38×15—19 μ.

On *Cissus erosus*, San Domingo, Ekman 2857, type (not seen by present author).

(858) *Asteridiella leeicola* Hansf., Sydowia **11**: 48. 1958.

Cols. amphigenous, to 2 mm. diam. or widely confluent, smooth, dense. Hyphae substraight to slightly undulate, opposite-branched at wide angles, densely reticulate, cells mostly 12—20×6—7 μ. Ch. alternate, subantrorse, straight or slightly bent, 12—19 μ long; stc. cuneate to cylindric, 2—8 μ long; hc. subglobose to oblong, entire, 8—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—17×6—7 μ. P. scattered, verrucose, to 150 μ diam., surface cells rounded-convex, to 10 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 29—35×13—16 μ.

On *Leea* sp., Philippines, PBS 36411, type (FLS).

(859) *Melioïa cissi-antarcticae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 80. 1954.

Cols. mostly hypophyllous, to 4 mm. diam. or confluent, thin, subvelvety. Hyphae crooked, cells mostly 25—40×6—7 μ, branching opposite or irregular at wide angles, closely interwoven-reticulate. Ch. alternate or more scattered, irregularly bent, spreading or antrorse, 25—40 μ long; stc. cylindric, 7 17 μ long; hc. very irregularly stellate-lobate and bent, versiform, 18—25×15—23 μ. Mh. mixed with ch., alternate, ampulliform, 20—28×8—9 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, acute, to 350×7—8 μ. P. scattered, verrucose, to 280 μ diam. Sp. oblong to ellipsoid, obtuse, 3-septate, slightly constricted, 30—53×16—20 μ, the middle cells larger than the end cells.

On *Cissus antarctica*, New South Wales, Fraser s. n., type.

The end cells often show a very faint sub-terminal pale band, like those of *Meliolina* spp.

(860) *Meliola cissi-repandae* Hansf., Reinwardtia **3**: 111. 1954.

Cols. epiphyllous, to 3 mm. diam., thinly velvety, thin. Hyphae substraight to crooked, cells mostly 20—25×6—8 μ, branching opposite or irregular at wide angles, rather closely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 16—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose, ovate or slightly rounded-angulose, often bent, 11—17×10—15 μ. Mh. mixed with ch., alternate, rarely opposite, ampulliform, 15—20×7—10 μ. Ms. scattered and grouped around P., erect, straight, simple, acute to obtuse, to 280×7—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric to subellipsoid, obtuse, 3-septate, slightly constricted, 33—39×12—14 μ, sometimes the ends subtruncate.

On *Cissus repanda*, Java, BO 11726 (type); BO 13209, with setae to 450 μ, sp. to 43 μ, and denser colonies.

(861) *Melioïa cissi-caesiae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 41. 1948.

Cols. epiphyllous, dense, velvety, to 3 mm. diam. Hyphae sinuous to crooked, cells mostly 15—20×5—7 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or to 20% opposite, spreading, usually straight, 12—17 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to clavate, entire, 9—13×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—18×7—8 μ. Ms. numerous, straight, to 160 μ high, 9—10 μ thick below, 2-dichotomous, branches straight, wide-spreading, acute or rarely 2-dentate, 1-ry to 20 μ long, 2-ry to 70 μ. P. scattered, almost smooth, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×12—15 μ.

On *Cissus caesia*, Sierra Leone, Deighton 1163, type.

(862) *Meliola furcata* Lev., Ann. Sci. Nat., III: **5**: 266. 1846.
= *Meliola merrillii* Syd., Philipp. Journ. Sci., C. Botany, 8: 479. 1913.
= *Meliola varia* Doidge, Trans. Roy. Soc. South Africa 5: 738. 1917.

Cols. mostly epiphyllous, dense, to 3 mm. diam. or confluent, velvety. Hyphae substraight to undulate, cells mostly 15—25×7—8 μ, branching alternate or irregular, acute, closely radiating-reticulate. Ch. alternate only, more or less antrorse, straight or bent, mostly 17—25 μ long, abnormally to 35 μ; stc. cylindric to cuneate, 6—12 μ long; hc. from subglobose and entire to shallowly and irregularly rounded-lobate, often bent, 13—18—(24)×10—16 μ. Mh. few, separate, opposite or alternate, ampulliform, 12—16×7—8 μ. Ms. fairly numerous, scattered, straight, to 240×8—10 μ, apex 2—3-furcate to 20 μ, br. dichotomous or 2-dentate to 20 μ. P. subaggregate, verrucose,

to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—42×14—15×11—13 μ.

On *Cissus (? sicyoides)*, Surinam, Kegel 595, type (P, ex Leveille); — On *C. sicyoides*, Cuba, Wright 393 (K); Nicaragua, Wright 548-b (K); Brazil, Ule s. n. (S); Porto Rico, Stevens 7690, 7913, 3948, 5819, 3145, 3143, 6063, 3565, 5102, 5846, 3910, 4418, 4398, 5788, 5789, 101, 4841, 5784, 8758; Whetzel 2638, 2675, 2543, Seaver 195, Kevorkian 69; Jamaica, Thaxter 7428 (F); Honduras, Standley 55209, 52793 (F); Costa Rica, Stevens 868, 685, 539, 326, 805; Panama, Stevens 1126, 458, 1351, 189, 348; — On *C. rhombifolia*, Panama, Stevens 120, 1318; — On *C.* sp., Brazil, Ule, Herb. brasil. 981; Porto Rico, Stevens 8101, 7968; Philippines, PBS 8672 (type of *M. merrillii*), 24017, 23885; — On *Rhoicissus rhomboidea*, South Africa, PRET 1639, 9717, 10145, 1154, 12319, 17730; — On *Vitis* sp., Costa Rica, Tonduz (S).

The Philippine specimens quoted above differ slightly in having about 1% of opposite ch.; the prinary setal branches are also longer, to 35 μ; these differences are not regarded as sufficient for the retention of *M. merrillii* as a separate species, or as a distinct variety, as there is considerable variation in these characters amongst the American specimens.

(863) *Meliola furcata* Lev. var. **major** Hansf., comb. n.
= *Meliola merrillii* Syd. var. *major* Hansf., Reinwardtia **3**: 111. 1954.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae crooked, cells mostly 20—25×7—9 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate or about 2% opposite, spreading, often bent, 17—28 μ long; stc. cylindric, 3—8 μ long; hc. irregularly clavate, often truncate at apex, or shallowly rounded-lobate, 13—20×11—20 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 20—26×7—10 μ. Ms. numerous, scattered and grouped around P., straight below, to 300×9—11 μ, apex 2—3-dichotomous, branches spreading, 1-ry to 50 μ, 2-ry to 35 μ, 3-ry to 20 μ, acute. P. scattered, verrucose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 45—52×19—21×16—19 μ.

On *Cissus repanda*, Java, BO 11726 p. p., type; — On *C.* sp., Congo Belge, Vanderyst 32462 (BRUX).

(864) *Meliola furcata* Lev. var. *ugandensis* Hansf., Sydowia **9**: 65. 1955.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 8 mm. diam. or confluent. Hyphae substraight, cells mostly 25—35×8—10 μ, branching alternate or irregular, closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—26 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. globose to clavate, entire or rounded-angulose, 14—17×10—14 μ. Mh. few, mixed with ch., opposite or

alternate, ampulliform, to 24 μ long. Ms. numerous, to 220×9—11 μ, apex cristate with 4—10 short branches to 20 μ long, each shortly 2—3-dentate. the whole apex forming a dense bunch of teeth to 30 μ diam. P. scattered, globose. to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 38—45×15—17 μ.

On *Rhoicissus revoilii*, Uganda, Hansford 2787 (type), 2812, 3176, 3416, 3607.

(865) *Meliola vitis* Hansf., Proc. Linn. Soc. Londin **158**: 26. 1946.

Cols. epiphyllous, to 3 mm. diam. or widely confluent, dense, velvety. Hyphae crooked, cells 25—40×6—8 μ, branching irregular at wide angles, densely reticulate and subsolid towards the centre. Ch. alternate or more scattered, straight or variously bent, spreading, 20—30 μ long; stc. cylindric, 4—8 μ long; hc. cylindric and entire. or clavate-truncate to subtriangular with rounded angles, straight or bent, 15—25×9—16 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 22—26×7—9 μ. Ms. numerous, scattered, straight, to 200×8—11 μ, 2—3-dichotomous above, branches spreading reflexed, 1-ry to 50 μ, 2-ry to 30 μ, 3-ry to 20 μ, acute. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—42×12—15 μ.

On *Vitis rheedii*, Ceylon, Herb. Peradeniya 5014, type.

(866) *Meliola cissi* Hansf., Journ. Linn. Soc. London **51**: 272. 1937.

Cols. epiphyllous and caulicolous, thin, to 5 mm. diam., thinly velvety. Hyphae undulate, cells mostly 20—40×7—8 μ, branching opposite, acute, loosely reticulate. Ch. alternate or opposite, straight or bent, more or less antrorse, 20—30 μ long; hc. clavate, entire, 14—19×11—14 μ; stc. cylindric to cuneate, 5—11 μ long. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. fairly numerous, scattered, straight, to 600×11—14 μ, irregularly dentate at apex to 30 μ, tips acute. P. scattered, verrucose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 45—48×17—19×14—15 μ.

On *Cissus* sp., Uganda, Hansford 1956 (type), 2816; Congo Belge, Vanderyst 29537 (BRUX). — On *C. oreophila*, Gold. Coast, Hughes in IMI 43613.

(867) *Meliola bakeri*, Syd., Ann. Mycol. Berlin **14**: 355. 1916.

Cols. amphigenous or caulicolous, to 3 mm. diam., dense, subvelvety. Hyphae substraight, cells mostly 20—30×7—10 μ, branching opposite, acute, closely reticulate and nearly solid. Ch. alternate ot to 80% opposite, spreading or antrorse, usually straight, 15—23 μ long; stc. cylindric, 3—6 μ long; hc. ovate to subglobose or short cylindric, entire, usually straight, 10—17×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. Ms. numerous, scattered, straight, simple, acute, to 540×8—11 μ. P. subaggregate, verrucose, to 200 μ diam. Sp. oblong, obtuwse, 4-septate, constricted, 38—44×10—15 μ.

On *Tetrastigma* sp., Philippines, Baker 3987 (type), Baker, Fung. malay. 42, 249, 362, PBS 20994, 24027, 24048, 23957, 15719, 1914, Stevens 1649, 1216; — On *Leea macrophylla*, India, Thirumalachar 867; On *Leeq* sp., India, Thirumalachar 857; — On *Vitaceae* indet., Uganda, Hansford 1930.

The Indian specimens quoted differ from the Philippine collections in ch. more frequently alternate, and hc. often slightly rounded-angulose.

(867-a) **Meliola corazoyensis** Hansf., sp. n.

Plagulae epiphyllea, usque ad 3 mm. diam., subdensae, tenuiter velutinae. Hyphae brunneae, undulatae vel sinuosae, alternatim vel irregulariter acuteque ramosae, subdense reticulatae, cellulis plerumque 20—40×6—8 μ. Hyphopodia capitata alternata, antrorsa, recta vel curvula, 17—22 μ longa; cellula basali cuneata, 4—9 μ longa; cellula apicali globosa vel late ovate, integra, 11—15×11—15 μ. Hyphopodia mucronata non visa. Setae myceliales dispersae, etiam juxta perithecia aggregatae, erectae, atrae, rectae vel leniter arcuatae, simplices, obtusae, usque ad 350×7—8 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 215 μ diam. Sporae atrobrunneae, oblongae, obtusae, 4-septatea, constrictae, 37—44×15—17×12—14 μ.

Hab. in foliis *Cissi* spec., Ecuador: Corazoy, 1892, Lagerheim, typus; Canfacoto, 1891, Lagerheim.

Both specimens are in Herb. Patouillard (F), and were determined by Gaillard as *Meliola parenchymatica*.

(868) *Meliola cissi-rhombifoliae* Hansf., Sydowia Beih. 1: 104. 1957.

= *Meliola rizalensis* Syd. var. *panamensis* Stev., Ann. Mycol. 26: 250. 1928.

Cols. epiphyllous, very thin and scarcely visible, to 5 mm. diam. Hyphae undulate to crooked, branching opposite at wide or acute angles, loosely interwoven-reticulate, cells mostly 30—40×5—6.5 μ. Ch. alternate, spreading or subantrorse, usually straight, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate, entire, 10—14×8—10 μ. Mh. separate, opposite or alternate, ampulliform, 13—24×6—7 μ. P. scattered, verrucose, to 130 μ diam. Ms. thinly scattered and grouped around P., straight or flexuous, simple, obtuse, to 230×7—8 μ. Sp. oblong, obtuse, 4-septate, constricted, 24—30×9—11 μ.

On *Cissus rhombifolia*, Panama ,Stevens 761, type (FLS), Honduras, Standley 53326 (F).

(869) *Meliola cissi-productae* Deight., Sydowia 5: 4. 1951.

Cols. mostly epiphyllous, thin, arachnoid, to 7 mm. diam. or widely confluent. Hyphae sinuous, cells mostly 30—40×5—7 μ, branching opposite, acute or wide, loosely reticulate. Ch. alternate, in groups separated by gaps without hyphopodia, 19—27 μ long; stc. cuneate, 4—8-(12) μ long; hc. ovate to subglobose, or widely truncate-

ovate, often sublobate, 14—17×13—17 μ. Mh. fairly numerous, separate or mixed with ch., opposite or alternate, ampulliform, 17—19—(26)×6—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 250×6—8 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—36×13—16×10—12 μ.

On *Cissus producta*, Sierra Leone, Deighton 2676, type.

Host Family 194. Rutaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.5330	Cols. dense; hyphae substraight; hc. lobate; sp. ellipsoid	*trachylaena*	(870)
3101.4320	Cols. dense; hyphae straight; hc. entire or angulose; sp. ellipsoid	*obesa*	(871)
3103.4330	Cols. dense; hyphae substraight; hc. subglobose to clavate; sp. ellipsoid	*obesa* var. *obesula*	(872)
3101.3220	Cols. dense; hyphae straight to crooked; hc. globose-ovate; sp. ellipsoid	*obesa* var. *clausenae*	(873)
3101.4230	Cols. dense; hyphae substraight; hc. sugulose to lobate	*fagarocila*	(874)
3103.4230	Cols. dense; hyphae substraight; hc. entire or angulose	*faragicola* var. *zanthoxyli*	(875)
3101.4220	Cols. thin to subdense; hyphae substraight; hc. ovate-oblong, bent	*casimiroae*	(876)

Meliola

3411.6333	Cols. dense, velvety; hyphae straight; hc. large, oblong to angulose; ms. acute; ps. circinate to straight, acute, to 160 μ	*juddiana*	(877)
3141.5222	Cols. thin, velvety; hyphae substraight; hc. ovate-oblong, entire; ms. dichotomous	*tenella*	(878)
3141.4321	Cols. dense, velvety; hyphae substraight; hc. cylindric-clavate; ms. 2-3-dichotomous	*tenella* var. *atalantiae*	(879)
3141.4231	Cols. dense, velvety; hyphae substraight; hc. elongate, entire; ms. 2-3-dichotomous	*patens*	(880)
3133.4233	Cols. dense, subvelvety; hyphae substraight; hc. ovate-piriform; ms. 2-4-dentate	*butleri*	(881)
3133.3221	Cols. thin, subvelvety; hyphae straight; hc. small, subglobose-ovate; ms. cristate	*fagarae*	(882)
31¾1.4223	Cols. subdense, velvety; hyphae substraight; hc. cylindric, entire; ms. dentate or furcate	*fagarae-martinicensis*	(883)
3131.4332	Cols. subdense, velvety; hyphae straight; hc. ovate-clavate, entire; ms. irregularly dentate	*galipeae*	(884)
3133.4331	Cols. dense, subvelvety; hyphae substraight; hc. globose-oblong; ms. cristate, shortly furcate or dentate	*evodiae*	(885)

31⅓3.4223	Cols. dense, velvety; hyphae sinuous; hc. ovate-cylindric; ms. obtuse to subacute or variously dentate	*citricola*	(886)
31⅓3.4233	Cols. dense, subvelvety; hyphae substraight; to crooked; hc. cylindric, entire; ms. acute or dentate	*citricola* var. *amyridis*	(887)
31⅓3.4222	Cols. dense; hyphae substraight; hc. ovate to cylindric, entire; ms. obtuse or dentate	*baileyi*	(888)
31⅓1.5332	Cols. thin, subvelvety; hyphae straight or undulate; hc. cylindric, elongate; ms. acute or dentate	*bouchardatiae*	(889)
31⅓1.5333	Cols. dense, velvety; hyphae straight; hc. ovate-piriform, large; ms. acute or dentate	*tecleae*	(890)
31⅓1.4321	Cols. dense; hyphae substraight; hc. ovate-cylindric, large; ms. acute or dentate	*kisubiensis* var. *phebalii-dentati*	(891)
31⅓3.4332	Cols. dense, velvety; hyphae substraight; hc. subglobose to cylindric, small; ms. arcuate to uncinate, acute or dentate	*rickiana*	(892)
3121.5332	Cols. dense, velvety; hyphae straight to sinous; hc. large, deeply lobate; ms. widely hamate, obtuse	*zanthoxyli*	(893)
3121.6332	Cols. dense, velvety; hyphae straight; hc. cylindric-piriform, large; ms. obtuse	*yangambiensis*	(894)
3121.6333	Cols. crustose, velvety; hyphae straight or undulate; hc. lobate; ms. obtuse	*fagarae-nitidae*	(899)
3123.4232	Cols. dense, velvety; hyphae substraight; hc. piriform-ovate to sublobate; ms. hamate, obtuse	*aterrima*	(896)
3112.4332	Cols. subdense, velvety; hyphae substraight; hc. ovate-cylindric; ms. acute	*toddaliae*	(897)
3113.5332	Cols. dense, crustose; hyphae undulate; hc. irregularly lobate; ms. obtuse	*monensis*	(898)
3113.5324	Cols. thin, subvelvety; hyphae straight; hc.		
3113.5324	Cols. thin, subvelvety; hyphae straight; hc. ovate-cylindric; ms. acute	*pilocarpi*	(899)
3113.5323	Cols. thin to dense, velvety; hyphae substraight; hc. oblong to subconoid, often recurved; ms. acute	*recurvipoda*	(900)
3113.4233	Cols. dense, velvety; hyphae substraight; hc. ovate-oblong; ms. obtuse	*peleae*	(901)
3113.4323	Cols. thin; hyphae substraight; hc. ovate-cylindric, elongate; ms. acute	*edanoana*	(902)
3113.4223	Cols. dense, subvelvety; hyphae substraight to undulate; hc. subglobose to oblong; ms. acute	*ludibunda*	(903)
3113.4222	Cols. dense, subvelvety; hyphae substraight; hc. subglobose to clavate; ms. acute	*koniaensis*	(904)
3113.4221	Cols. thin; hyphae straight; hc. globose to ovate, small; ms. acute	*toddaliicola*	(905)
3113.4233	Cols. dense; hyphae substraight; hc. ovate; ms. acute	*toddaliicola* var. *indica*	(906)

3113.3223	Cols. thin; hyphae substraight; hc. ovate-cylindric, entire, small; ms. acute	*cadigensis*	(907)
3111.5334	Cols. thin subvelvety; hyphae straight to undulate; hc. ovate-subglobose; ms. acute ..	*kisubiensis* var. *peleicola*	(908)
3111.5333	Cols. dense, subcrustose; hyphae straight to undulate; hc. ovate-piriform or subangulose; ms. acute	*kisubiensis*	(909)
3111.5332	Cols. dense, velvety; hyphae straight or undulate; hc. cylindric, entire; ms. acute	*kisubiensis* var. *bosistoae*	(910)
3111.5331	Cols. dense, subcrustose; hyphae substraight; hc. ovate-cylindric or subangulose; ms. obtuse	*kisubiensis* var. *medicosmae*	(911)
3111.5333	Cols. dense; hyphae substraight; hc. elongate, ovate-cylindric; ms. acute.....	*macropoda*	(912)
3111.4233	Cols. subdense, velvety; hyphae substraight; hc. cylindric; ms. acute	*tecleae* fvar. *toddaliae-asiaticae*	(913)
3111.4232	Cols. thin; hyphae crooked; hc. lobate; ms. acute.....	*microthecia*	(914)
3111.3221	Cols. thin; hyphae undulate; hc. ovate to cylindric; entire or angulose; ms. obtuse	*evodiicola*	(915)
3111.3221	Cols. subdense; hyphae undulate; hc. ovate to cylindric or angulose; ms. acute	*atalayae*	(916)
3111.3221	Cols. thin; hyphae undulate; hc. globose-ovate; ms. obtuse	*monnieriae*	(917)

(870) **Asteridiella trachylaena** (Syd.) Hansf., comb. n.

= *Irene trachylaena* Syd., Ann. Mycol. **21**: 318. 1926.

= *Irenina trachylaena* (Syd.) Stev., l. c., **25**: 466. 1927.

Cols. epiphyllous, to 3 mm. diam., dense. Hyphae substraight, cells mostly 15—20×8—9 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. alternate, antrorse, usually straight, 20—33 μ long; stc. cuneate to cylindric, 5—11 μ long; hc. irregularly lobate, 13—23×12—20 μ. Mh. mixed with ch., opposite or alternate, 20—25×9—11 μ. P. scatter3ed, verrucose, to 250 μ diam., surface cells 30—40 μ diam., bluntly conoid to mammillate, to 25 μ high. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 43—52×19—23 μ.

On *Zanthoxylum elephantiasis*, Costa Rica, Sydow, Fung. costaric. 114. type; — On *Z. limoncello*, Costa Rica, Stevens 184 (FLS).

(871) *Asteridiella obesa* (Speg.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola obesa* Speg., Anal. Soc. Cient. Argent. **72**: 179. 1883.

= *Irene obesa* (Speg.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

= *Irenina obesa* (Speg.) Stev., l. c., **25**: 450. 1927.

Cols. epiphyllous, to 3 mm. diam., dense, smooth. Hyphae substraight, branching opposite, acute, densely reticulate and nearly solid, cells mostly 12—20×6—8 μ. Ch. alternate, antrorse, straight

or bent, 14—22 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. clavate, rounded and entire at apex, or shallowly rounded-angulose and irregular, 12—16×9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—24×7—9 μ, neck elongate. P. scattered, verrucose, to 190 μ diam.; surface cells rounded, slightly projecting. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 38—43×19—22 μ.

On *Rutaceae* indet., Paraguay, Balansa 3834, type (SPEG 547, S. P); — On *Helietta cuspidata*, Argentina, SPEG 532; — On *Balfourodendron riedeliana*, Argentina, SPEG 533.

(872) *Asteridiella obesa* (Speg.) Hansf. var. **obesula** (Speg.) Hansf., comb. n.

= *Meliola obesula* Speg., Rev. Argent. Hist. Nat. **1**: 27. 1891.

= *Irene caaguazensis* Hansf., Sydowia **9**: 32. 1955.

Cols. epiphyllous, dense, to 1 mm. diam. Hyphae substraight, branching opposite, acute, densely radiating-reticulate and becoming almost solid, cells mostly 15—20×7—9 μ. Ch. alternate or about 5% opposite, more or less antrorse, straight or bent, 14—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to wide clavate, entire or often rounded-angulose, 9—17×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—28×7—9 μ, neck elongate. P. in central group, verrucose, to 280 μ diam., surface cells rounded to obtusely conoid, to 12 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—48×20—23 μ.

On ? *Esenbeckia latifolia*, Paraguay, Balansa 3585 (SPEG 556, type).

(873) *Asteridiella obesa* (Speg.) Hansf., var. *clausenae* Hansf., Sydowia **10**: 57. 1957.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae substraight to crooked, cells mostly 15—20×5—8 μ, branching opposite or alternate, acute to wide, closely reticulate and nearly solid. Ch. alternate or about 1% opposite, more or less antrorse, straight or slightly bent, 13—24 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose to ovate, usually entire, rarely rounded-angulose to sublobate, 10—17×9—14 μ. Mh. mixed with ch., alternate, rarely opposite, ampulliform, 14—20×6—8 μ. P. scattered, to 190 μ diam., surface cells rounded and convex, to 10 μ high. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 33—39×14—16×12—14 μ.

On *Clausena excavata*, Java, BO 12211, type.

(874) *Asteridiella fagaricola* (Speg.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola fagaricola* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 352. 1924.

= *Irenina fagaricola* (Speg.) Stev., Ann. Mycol. 25: 458. 1927.

Cols. amphigenous, dense, smooth, to 1 mm. diam. Hyphae substraight, branching opposite at wide angles, densely reticulate, cells mostly 15—20×7—9 μ. Ch. alternate or about 2% opposite,

more or less antrorse, straight or slightly bent, 20—35 μ long; stc. cuneate, 4—12 μ long; hc. clavate, irregular and angulose to shallowly lobate, versiform, 16—23×10—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—30×7—9 μ. neck elongate. P. scattered, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—46×20—23 μ.

On *Fagara* ap., Argentina, SPEG 1811 (type); — On *F. chiloperone*, Argentina, SPEG 510; — On *F. pterota*, Venezuela, Muller 2359 (CUP.

(875) *Asteridiella fagaricola* (Speg.) Hansf. var. *zanthoxyli* Hansf., Sydowia **10**: 54. 1957.

Cols. mostly epiphyllous, dense, to 1 mm. diam., smooth. Hyphae substraight to undulate, branching opposite at wide angles, becoming closely reticulate and almost solid, cells mostly 15—25×6—9 μ. Ch. alternate or to 90% opposite in some colonies, antrorse or spreading, straight or bent, 20—27 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. clavate to cylindric, entire, angulose or rarely sublobate, 14—20×8—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×7—9 μ. P. scattered, verrucose, to 250 μ diam., surface cells rounded to obtusely conoid, to 10 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 35—40×16—18 μ.

On *Zanthoxylum hymemale*, Argentina, SPEG 502, type.

(876) *Asteridiella casimiroae* Hansf., Sydowia **11**: 47. 1958.

Cols. epiphyllous, thin to subdense, smooth, to 3 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, acute, loosely to closely reticulate, cells mostly 30—40×7—9 μ Ch. alternate, subantrorse, usually bent, 25—35 μ long; stc. cuneate, 5—12 μ long; hc. bent ovate to oblong, entire, 19—25×11—13 μ. Mh. mixed with ch. in centre of colony, opposite, alternate or ternate, ampulliform, 17—23×7—9 μ. P. scattered, globose, verrucose, to 170 μ diam., surface cells rounded, to 12 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 39—44×16—18×14—15 μ.

On *Casimiroa tetrameria*, Costa Rica, Stevens 233, type (FLS).

(877) *Meliola juddiana* Stev., Bull. Bishop Mus. **19**: 32. 1925.

Cols. amphigenous, dense, to 1 mm. diam., velvety. Hyphae straight, cells mostly 15—20×10—12 μ, branching opposite at wide angles, densely reticulate and subsolid. Ch. alternate or very rarely opposite (much less than 1%), usually antrorse-bent, 22—40 μ long; stc. cylindric to cuneate, 7—20 μ long; hc. oblong, rounded or truncate at apex, sometimes irregularly sublobate, 15—27×12—20 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 18—25×10—12 μ. Ms. closely scattered, straight, simple, acute when fully mature, to 990×13—15 μ. P. scattered, verrucose, to 240 μ diam.; ps. 3—8, spreading-erect, circinate to nearly straight, simple, acute, thick-walled, 2—4-septate, to 130×8—9 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 55—66×22—28 μ.

On *Pelea* sp., Hawaii, Stevens 986 (type), 974, 346, 483, 1910, 1915, 111, 712, 1034, 235, 297, 704, 1148, 1048, 411 p. p., 1328 p. p., Shear 679.

(878) *Meliola tenella* Pat., Rev. Mycol. **10**: 140. 1888.

Cols. amphigenous, thin to dense, velvety, to 5 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 17—30× 7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or usually slightly bent, spreading or subantrorse, 20—25 μ long; stc. cylindric, 6—10 μ long; hc. cylindric to clavate, usually bent, entire, 12—20×8—11 μ. Mh. rare, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered, straight, to 240 μ high by 9—12 μ thick below, 2—3-dichotomous above, branches widely divergent-reflexed, 1-ry to 120 μ, 2-ry to 20 μ, 3-ry to 10 μ, acute. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—55×17—20 μ.

On *Murraya* sp., Tonkin, Bon 775, type (F); — On *M. exotica*, India, Thirumalachar s. n.!; Java, Raciborski in Herb. Hoehnel (F).

(879) *Meliola tenella* Pat. var. *atalantiae* (Pat.) Hansf., Proc. Linn. Soc. London **158**: 35. 1946.

= *Meliola bambusae* Pat. var. *atalantiae* Pat., Journ. de Bot. **11**: 348. 1897.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae substraight, cells mostly 15—20×8—10 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, usually straight and parallel to the branch hyphae, 17—22 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. cylindric with rounded apex, to clavate, entire, usually straight, 11—19×9—11 μ. Mh. few, mixed with ch., alternate, rarely opposite, ampulliform. Ms. numerous, straight, to 200 μ high by 10—12 μ thick below, 2—3-dichotomous above, the branches widely spreading-reflexed, 1-ry to 90 μ, 2-ry to 50 μ, 3-ry to 20 μ, acute. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—50×18—21 μ.

On *Atalantia buxifolia*, Tonkin, Bon 5206 (type), 5231, 5172 (Herb. Patouillard in F); — On *A. monophylla*, Ceylon, Thwaites 419 (K, S), Herb. Peradeniya 4767; — On *A. bilocularis*, Formosa, Yamamoto; — On *A. disticha*, Philippines, PBS 30107 (FLS).

(880) *Meliola patens* Syd., Leafl. Philipp. Botany **5**: 1538. 1912.

Cols. hypophyllous, velvety, to 20 mm. diam., dense. Hyphae straight or slightly undulate, cells mostly 20—30×5—8 μ, branching opposite at wide angles, closely interwoven-reticulate. Ch. alternate, usually more or less curved, 23—40 μ long; stc. cylindric, 5—18 μ long; hc. ovoid to cylindric-clavate, often bent, entire or slightly angulose, 16—23×8—12 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Ms. numerous, straight, to 300×8—10 μ, 2—3-dicho-

tomous above, branches wide-spreading, 1-ry to 120 μ, 2-ry to 60 μ, 3-ry to 20 μ, acute. P. verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—52×16—20×13—14 μ.

On *Lunasia amarae*, Philippines, PBS 13023, type; — On *Murraya paniculata*, Philippines, Stevens 1763.

(881) *Meliola butleri* Syd., Ann. Mycol. Berlin **9**: 379. 1911.
= *Amazonia Butleri* (Syd.) Stev., l. c., **25**: 415. 1927.

Cols. amphigenous, mostly epiphyllous, to 4 mm. diam., subcrustose, dense, sometimes velvety. Hyphae substraight to slightly undulate, cells mostly 15—20×6—7 μ, branching opposite or irregular at wide angles, densely reticulate and almost solid. Ch. alternate or to 20% opposite, spreading or antrorse-bent; 13—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subgloobse, clavate or cylindric, often bent, entire, 10—15×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. few to numerous, scattered, straight, to 720×9—11 μ, apex 2—4-dentate to 12 μ, acute. P. closely scattered, verrucose, to 230 μ diam., originating from a radiate disc and flattened when young; globose when mature. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—43×13—18 μ.

On *Citrus medica* var. *acida*, India, Butler 1042, type; — (On *C. tankan*, *C. pooenensis*, *C. maxima*, Formosa, Yamamoto; — On *C.* sp., Philippines, PBS 17238.

(882) *Meliola fagarae* Hansf., Proc. Linn. Soc. London **153**: 10. 1941.

Cols. thin, epiphyllous, to 7 mm. diam. Hyphae substraight, cells mostly 23—40×6 μ, branching opposite, acute, loosely reticulate. Ch. alternate or opposite, straight or slightly bent, 12—16 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. globose to ovate, entire, 8—12×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered, straight, to 210×5—7 μ, apex 2—6-dentate-cristate, to 10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—36×13—16 μ

On *Fagara angolensis*, Uganda, Hansford 2414, type; Gold Coast, Deighton CB 927; — On *F. melanacantha*, Sierra Leone, Deighton 1331; — On *F. attiensis*, Gold Coast, Deighton CB 873; Sierra Leone, Deighton 1536, 1471; — On *Rutaceae* indet., Gold Coast, Hughes in IMI 44541.

(883) *Meliola fagarae-martinicensis* Hansf., Proc. Linn. Soc. London **160**: 126. 1948.

Cols. epiphyllous, velvety, subdense, to 5 mm. diam. or confluent. Hyphae substraight, cells mostly 20—35×7—8 μ, branching usually opposite at wide angles, closely reticulate. Ch. alternate, spreading, usually straight, 20—28 μ long; stc. cylindric, 3—7 μ long; hc. cylindric or less commonly subclavqte to ovate, entire, 13—22×7—10 μ. Mh. few, mixed with ch. in centre of colony, usually opposite, ampulli-

form, 17—21×7—8 μ. Ms. fairly numerous, scattered, straight, to 650×8—9 μ, rarely simple and attenuate-obtuse, usually 2—4-dentate to 10 μ, rarely furcate to 30 μ. P. scattered, verrucose, to 190 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 36—43× 16—18 μ.

On *Fagara martinicensis*, San Domingo, Ciferri, Mycofl. doming. exs. 50, type.

(884) *Meliola galipeae* Syd., Ann. Mycol. **15**: 77. 1917.

Cols. hypophyllous, to 8 mm. diam., thin, velvety. Hyphae straight, cells mostly 25—30×8—9 μ, branching opposite, acute, loosely reticulate-interwoven. Ch. alternate, straight or usually bent, 20—26 μ long, subantrorse or spreading; stc. cylindric to cuneate, 4—7 μ long; hc. ovate to oblong, often bent, entire, 15—20×10—14 μ. Ms. numerous, scattered, mostly straight, to 360×8—10 μ, apex 2—4-dentate to 15 μ. Mh. few, mixed with ch., alternate or opposite, 17—20×7—9 μ. P. scattered, verrucose, to 300 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 42—48×16—20×13—15 μ.

On *Galipea* sp., Brazil, Ule, Herb. brasil. 3433, type (S).

(885) *Meliola evodiae* Pat., Rev. Mycol. **10**: 139. 1888.

Cols. amphigenous, to 2 mm. diam. or confluent, dense, subvelvety. Hyphae substraight, cells mostly 12—29×7—8 μ, branching opposite at wide angles, densely reticulate and nearly solid in older colonies. Ch. alternate, or about 2% opposite, more or less antrorse, straight or bent, 14—23 μ long; stc. cylindric, 3—8 μ long; hc. globose to oblong-clavate, entire, 10—17×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. numerous, straight, to 300×10—12 μ, apex with 2—3 short branches to 20 μ, these divergent and 2-dentate to 10 μ, rarely shortly dichotomous. P. scattered, globose, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×18—21×13—15 μ.

On *Evodia* sp., Samoa, type (P); — On *E. meliaefolia*, Philippines, PBS 32177 (FLS).

(886) *Meliola citricola* Syd., Ann. Mycol. **15**: 183. 1917.

Cols. amphigenous, to 5 mm. diam. or confluent, dense, sometimes subvelvety. Hyphae substraight to undulate, crooked on lower surface, cells mostly 15—20×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, or to about 15% opposite, spreading, straight or bent, 15—22 μ long; stc. cylindric, 3—6 μ long; hc. cylindric, straight or bent, entire, 10—16×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22×6—8 μ. Ms. fairly numerous, scattered, straight, simple and obtuse, or variously dentate to 15 μ, to 700×8—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 33—42×14—18 μ.

On *Citrus* sp., Philippines, PBS 23747 (type), 29561, Baker 1237 (S); Java, BO 12085; Sumatra, BO 2828; Singapore, Chipp

5949, Baker 1627; Borneo, Clemens s. n. (BM); New Guinea, Shaw 640, 190 (WARI 7761, 7764); — On *C. nobilis*, Java, BO 4748; Philippines, PBS 39353, Reinking in USDA 3776; — On *C. medica*, Java, BO 936; — On *C. maxima*, Philippines, PBS 39987, 39261, 40047, Stevens 984; — On *C. decumana*, Philippines, PBS 21895; — On *C. aurantiifolia*, Philippines, PBS 39982, Stevens 411, 574. — On *C. aurantium bigarada*, Ceylon, Herb. Peradeniya 5108 (and BM); Tonkin, Balansa in Roum., Fung. sel. exs. 4434 (F).

(887) *Meliola citricola* Syd. var. *amyridis* Hansf., Sydowia 9: 40. 1955.

Cols. amphigenous, mostly hypophyllous. dense, to 5 mm. diam., thinly velvety. Hyphae substraight to undulate, cells mostly 20—30× 5—7 μ, loosely to closely reticulate, branching opposite at wide angles. On lower surface the hyphae are crooked to geniculate, and very closely reticulate. Ch. opposite or alternate in varying proportions, on lower surface less frequently opposite and much bent, spreading, 13—20 μ long; stc. cylindric, 3—5 μ long; hc. cylindric, straight or bent, entire, or on lower surface sometimes somewhat angulose, 10—16×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×6—7 μ. Ms. scattered and grouped around P., straight, simple and acute, or the apex scabrid to shortly dentate, rarely to 20 μ, up to 850×9—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 39—45×17—21 μ.

On *Amyris diatrypa*, San Domingo, Ciferri, Mycofl. doming. exs. 255, type (K).

(888) *Meliola baileyi* Hansf., Proc. Linn. Soc. N. S. W. 78: 75. 1954.

Cols. hypophyllous, to 2 mm. diam. or confluent, dense, subvelvety. Hyphae substraight, cells mostly 15—25×7—9 μ, branching opposite at wide angles, closely reticulate and nearly solid in centre. Ch. opposite or alternate in varying proportions, subantrorse, straight or bent, 15—23 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate to cylindric, entire, straight or slightly bent, 11—18×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20× 7—9 μ. Ms. thickly scattered, straight, to 320×8—10 μ, obtuse or usually 2—3-dentate to 10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 43—48× 18—20 μ.

On *Flindersia collina*, Queensland, Bailey 611, type; — On *Eriostemon lanceolatum*, New South Wales, Fraser 152; — On *Phebalium squamulosum*, New South Wales, Fraser 7-A; — On *Rutaceae* indet., Queensland, Bailey 645 (the Kew copy gives host as *Citrus australis*).

On *Eriostemon* the sp. are 45—54×19—22×15—17 μ, and P. to 240 μ; On *Phebalium* the ms. reach 540 μ.

(889) *Meliola bouchardatiae* Hansf., Proc. Linn. Soc. N. S. W. 78: 74. 1953.

Cols. hypophyllous, rather thin, to 3 mm. diam. or confluent, thinly velvety. Hyphae substraight to undulate, cells mostly 20—30× 7—9 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, at wide angles, straight or bent, 22—37 μ long; stc. cylindric to zuneate, 4—11 μ long; hc. cylindric, entire, 17—26× 8—11 μ. Mh. mixed with ch., alternate, ampulliform, 15—22×7—9 μ. Ms. scattered and grouped around P., straight, to 450×9—11 μ, apex simple and acute, or 2—3-dentate to 7 μ. P. scattered, verrucose, to 240 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—56×19—22 μ.

On *Bouchardatia neurococca*, New South Wales, Fraser 230, type; — On *Amyris* sp., Cuba, Wright 571 (F. K), with ms. to 600 μ and sp. 46—55×21—25 μ.

(890) *Meliola tecleae* Hansf., Proc. Linn. Soc. London **153**: 11. 1941.

Cols. epiphyllous, to 3 mm. diam., subdense, velvety. Hyphae straight, cells mostly 20—30×9—10 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 25—30 μ long; stc. cylindric to cuneate, 7—10 μ long; hc. ovate to piriform, entire, 19—23×11—14)μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. numerous, straight or slightly bent, to 680×8—9 μ, apex simple and acute, or 2-dentate to 8 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 52—56×19—23 μ.

On *Teclea nobilis*, Uganda, Hansford 1908 (type), 2029, 2327, 3065, 3194, 3445.

(891) *Meliola kisubiensis* Hansf. var. *phebalii-dentati* Hansf., Proc. Linn. Soc. N. S. W. **78**: 72. 1954.

Cols. epiphyllous, dense, to 1 mm. diam., or sometimes confluent. Hyphae substraight, cells mostly 15—20×7—9 μ, branching opposite, wide, closely reticulate and almost solid in centre. Ch. alternate or very rarely opposite, 17—27 μ long, mostly straight and more or less antrorse; stc. cylindric, 5—9 μ long; hc. ovate to cylindric, entire, 12—18×9—11 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 15—20×7—9 μ. Ms. rather sparse, scattered and grouped around P., straight, to 230×8—9 μ, apex simple and acute, or 2-dentate to 8 μ. P. in loose central group, verrucose, to 180 μdiam. Sp. cylindric to ellipsoid, 4-septate, constricted, 45—50×17—21 μ.

On *Phebalium dentatum*, New South Wales, Fraser 7, type.

(892) *Meliola rickiana* Hansf., Sydowia **9**: 24. 1955.

Cols. on petioles and amphigenous, dense, to 2 mm. diam., velvety. Hyphae substraight, cells mostly 20—30×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or about 4% opposite, more or less antrorse, usually straight, 15—19 μ long; stc. cylindric, 3—6 μ long; hc. subglobose, ovate or short cylindric, obtuse, entire, 10—14×8—11 μ. Mh. mixed with ch., alternate or opposite, ampulli-

form, 15—20×7—9 μ. Ms. thickly scattered and grouped around P., broadly arcuate to uncinate, acute or minutely 2-dentate to 3 μ, up to 350×10—12 μ thick below .P. scattered, verrucose, to 220 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 46—53×18—21×15—16 μ.

On *Zanthoxylum* sp., Brazil, Rick 35, type (S).

(893) *Meliola zanthoxyli* Hansf., Proc. Linn. Soc. London **158**: 37. 1946.

Cols. epiphyllous, dense, velvety, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 15—20×9—11 μ, branching opposite at wide angles, densely reticulate and subsolid. Ch. alternate, antrorse, usually straight, 25—32 μ long; stc. cylindric to cuneate, 8—13 μ long; hc. irregularly and deeply 3—6-stellate-lobate, 14—24×15—22 μ. Mh. mixed with ch., usually alternate, ampulliform, 15—20×6—10 μ. Ms. numerous, scattered, simple, obtuse, widely hamate, to 400×10—12 μ. P. scattered, verrucose, to 250 μ diam. Sp. obling to ellipsoid, obtuse, 4-septate, constricted, 50—58×21—24 μ.

On *Zanthoxylum tetraspermum*, Ceylon, Herb. Peradeniya 5597, type; On *Z.* sp., Bombay, in F.

(894) *Meliola yangambiensis* Hansf., Proc. Linn. Soc. London **159**: 26. 1947.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., dense, velvety, closely scattered but usually discrete. Hyphae straight, cells mostly 30—40×10—12 μ, branching mostly opposite, acute, closely reticulate. Ch. alternate, straight, antrorse, 28—37 μ long; stc. cylindric to cuneate, 8—13 μ long; hc. cylindric to slightly clavate, entire, 20—26×12—16 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 22—28×10—13 μ. Ms. numerous, closely scattered, widely hamate or irregularly bent, simple, obtuse, to 400×10—12 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong to wide ellipsoid, obtuse, 4-septate, constricted, 50—61×22—27 μ.

On *Fagara laurentii*, Congo Belge, Hendrickx 3018, type.

(895) **Meliola fagarae-nitidae** Hansf., nom. n.

= *Meliola fagaricola* Yamam., Trans. Nat. Hist. Soc. Formosa, **30**: 419. 1940, non Speg., 1924.

Cols. amphigenous, mostly epiphyllous, velvety, crustose, to 5 mm. diam. Hyphae straight or slightly undulate, cells 16—37×8—10 μ, branching jmostly opposite, densely reticulate. Ch. alternate, 29—40 μ long; stc. subcylindric, 7—16 μ long; hc. irregular, 2—4-lobate, 21—28×18—25 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—30×8—10 μ. Ms. numerous, simple, obtuse, more or less uncinate, to 650×8—10 μ. P. scattered, verrucose, to 270 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, strongly constricted, 51—64×14—25 μ.

On *Fagara nitida*, Formosa, Yamamoto, type (not seen by present author).

(896) *Meliola aterrima* Syd., Ann. Mycol. 24: 294. 1926.

Cols. on petioles, rarely amphigenous on leaves, dense, velvety, to 3 mm. diam. Hyphae substraight, branching opposite, acute, densely reticulate and nearly solid, cells mostly 15—25×7—8 μ. Ch. alternate or opposite, antrorse, straight or bent, 20—30 μ long; stc. cuneate, 5—12 μ long; hc. irregularly oblong-clavate, margin crenate to lobate, 17—23×10—15 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, conoid to ampulliform, 20—30×6—8 μ. Ms. numerous, closely scattered, to 400×10—12 μ, arcuate to hamate above, apex obtuse. P. closely scattered, to 280 μ diam., verrucose. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—48×15—19 μ.

On *Zanthoxylum procerum*, Costa Rica, Sydow, Fung. costaric. 113-a, type.

(897) *Meliola toddaliae* Doidge, Trans. Roy. Soc. South Africa, 5: 732. 1916.

Cols. amphigenous, velvety, dense, to 5 mm. diam., easily secedent. Hyphae substraight, cells mostly 10—20×7—10 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, crowded, straight or slightly bent, more or less antrorse, 16—20 μ long; stc. cuneate to cylindric, 3—8 μ long; hc. subglobose to cylindric or clavate, entire, straight or slightly bent, 14—16×8—10 μ. Mh. mixed with ch., opposite, ampulliform, 18—20×8—10 μ. Ms. numerous, closely scattered, straight, simple, acute or acuminate, to 350×8—10 μ. P. scattered, verrucose, to 250 μ diam., surface cells rounded or conoid, to 15 μ high. Sp. oblong to subellipsoid, obtuse, 45—50×20—23 μ, 4-septate, slightly constricted.

On *Vepris* (Toddalia) *lanceolata*, South Africa, PRET 8788, 8999, 10860, 11353, 11374, 11564, 11827, 11881, 12324, 12418, 14954, 17113, 17260; — On *Teclea natalensis*, South Africa, PRET 12287; — On *Fagara capensis*, South Africa, PRET 12275, 12440, 17774; — On *F. davyi*, South Africa, PRET 15331.

(898) *Meliola monensis* Stev., Illinois Biol. Monogr. 2: 28. 1916.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense, crustose, velvety. Hyphae substraight to undulate, cells mostly 15—20×6—8 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. alternate or to 5% opposite, closely crowded, more or less antrorse, 20—29 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. irregularly stellate-lobate, 13—20×12—18 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, straight, simple, obtuse, to 400×10—14 μ. P. closely scattered, globose, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 45—52×20—23 μ.

On *Amyris elemifera*, Porto Rico, Stevens 6158, type (FLS), 6150, 6146, 8547.

(899) *Meliola pilocarpi* Stev., Illinois Biol. Monogr. 2: 41. 1916. (3113.5324)

Cols. amphigenous, to 10 mm. diam., thin, subvelvety. Hyphae straight, cells mostly 20—30×8 μ, branching usually opposite, acute, loosely reticulate. Ch. alternate or to 20% opposite, more or less antrorse, usually straight, 20—29 μ long; stc. cylindric, 4—8 μ long; hc. cylindric, ovate or slightly clavate, entire, 15—20×10—13 μ. Mh. mixed with ch., mostly opposite, ampulliform, 20—30×7—9 μ. Ms. few, to fairly numerous, scattered, straight, simple, acute, to 1100×10—12 μ. P. loosely scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 49—54×20—24 μ

On *Pilocarpus racemosus*, Porto Rico, Stevens 7080 (type); — On *P. pennatifolia*, Argentina, SPEG 629.

(900) *Meliola recurvipoda* Hansf., Sydowia Beih. 1: 114. 1957.

Cols. amphigenous, thin to dense, more or less velvety, to 5 mm. diam. Hyphae substraight, brnaching opposite and acute, becoming closely interwoven-reticulate, cells mostly 20—30×6 μ. Ch. alternate or opposite in varying proportions, antrorse or spreading, often recurved, usually more or less bent, 16—22 μ long; stc. cylindric, 3—8 μ long; hc. oblong to subeconoid, th apex obtuse or attenuate-rounded, entire, 10—15×7—9 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform, 18—22×6—7 μ. Ms. numerous, straight, simple, acute, to 800×9—12 μ. P. scattered, globose, verrucose, to 180 μ diam. Sp. narrowly ellipsoid, obtuse, 4-septate, constricted, 47—55×19—21×16—18 μ.

On *Pelea hawaiiensis*, Hawaii, Stevens 411, type (FLS).

(901) *Meliola peleae* Stev., Bull. Bishop Mus. **19**: 34. 1925.

Cols. amphigenous, mostly hypophyllous, dense, velvety, to 10 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×5—6 μ, branching opposite, acute, closely reticulate. Ch. alternate or opposite, subantrorse, straight or slightly bent, 12—16 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to oblong, entire, 8—13×7—9 μ, apex widely rounded. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—17×6—8 μ. Ms. scattered, straight, simple, obtuse, to 600×9—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—46×15—18 μ.

On *Pelea* sp., Hawaii, Stevens 840 (type), 988, 726, 434, 1073, 669, 974; — On *P. cinerea*, Hawaii, Stevens 816, 251, 1776; — On *P. parvifolia*, Hawaii, Stevens 411 p. p.; — On *P. elliptica*, Hawaii, Stevens 26, 203, 1916, 526; — On *P. barbigera*, Hawaii, Stevens 440; — On *P. sandwicensis*, Hawaii, Stevens 449; — On *P. rotundifolia*, Hawaii, Stevens 200, 1328 p. p., 1915.

(902) *Meliola edanoana* Hansf., Sydowia Beih. **1**: 107. 1957.

Cols. epiphyllous, thin, to 5 mm. diam. or confluent. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—35×6—7 μ. Ch. alternate or to 10μ opposite, spreading, usually bent, 22—40 μ long; stc. cylindric, 4—12 μ long; hc. narrow ovate to cylindric, straight or bent, entire, apex pointed to rounded, 17—30×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 30—40×8—10 μ, neck elongate. Ms. grouped around P., straight, simple, acute, to 700×10 μ. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid, obtuse, 4-septate, strongly constricted, 38—45× 18—22×16 μ.

On *Zanthoxylum* sp., Philippines, PBS 36366, type (FLS).

(903) *Meliola ludibunda* Speg., Anal. Soc. Cient. Argentina **17**: 178. 1883.

Cols. hypophyllous, thin to dense, to 3 mm. diam. Hyphae substraight to undulate or sinuous, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate or opposite in varying proportions, antrorse, spreading, or sometimes retrorse, straight or usually or less bent, 18—25 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to bent ovate, entire or angulose, especially around apex, 13—19×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—8 μ. Colonies heavily parasitised and further details not discernible (Spegazzini: Ms. substraight, simple, obtuse, to 700×8 μ; P. verrucose, to 200 μ diam.; sp. 40—50×14—16×12 μ, 4-septate).

On *Pilocarpus pinnatus*, Paraguay, Balansa 3489 (SPEG 546), type; — On *Pilocarpus* sp. or *Zanthoxylum* sp., Paraguay, Anisitz 270 (SPEG 615).

(904) *Meliola koniaensis* Hansf. & Deight., Mycol. Paper, IMI **23**: 41. 1948. (3113.42222)

Cols. amphigenous, to 3 mm. diam. or confluent, dense, subvelvety. Hyphae substraight to undulate, cells mostly 15—20×6—7 μ, branching opposite, acute, closely interwoven-reticulate. Ch. opposite or about 20% alternate, straight or slightly bent, more or less antrorse, 11—16 μ long; stc. cylindric, 3—5 μ long; hc. subglobose to cylindric, entire, 8—13×7—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—18×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 410×8 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 33—42×13—15 μ.

On *Rutaceae* indet., Sierra Leone, Deighton 2277, type; — On *Monnieria trifolia*, Brazil, IMUR 169, leg. Vital; — On *Balsamocitrus paniculata*, Gold Coast, Hughes in IMI 44544, 44545.

(905) *Meliola toddaliicola* Hansf., Proc. Linn. Soc. London **158**: 36. 1946.

Cols. epiphyllous, rarely amphigenous, to 1 mm. diam., very thin

and scarely visible. Hyphae substraight to undulate, cells mostly 20—25×6—7 μ, branching mainly opposite at wide angles, loosely reticulate. Ch. alternate or to 40% opposite, slightly antrorse, usually straight, 12—15 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose to ovate, rarely cylindric, entire, 9—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform 12—17×6—8 μ. Ms. mostly grouped around P., straight, simple, acute, to 200×7—8 μ. P. scattered, each on radiate subiculum, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 37—41×15—17 μ.

On *Toddalia asiatica*, Uganda, Hansford 3645, p. p., type.

(906) *Meliola toddaliicola* Hansf. var. *indica* Hansf. & Thirum., Farlowia **3**: 299. 1948.

Cols. dense, to 3 mm. diam., epiphyllous. Hyphae substraight, cells mostly 15—20×6—7 μ, branching opposite, subrectangular, closely reticulate. Ch. opposite or to 30% alternate, spreading or antrirse. usually straight, 13—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. wide ovate, entire, 10—15×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—20×7—9 μ. Ms. mostly grouped around P., straight, simple, acute, to 280×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 39—44×15—17 μ.

On *Toddalia aculeata* var. *floribunda*, India, *Thirumalachar* 875 p. p., type.

(907) *Meliola cadigensis* Yates, Philipp. Journ. Sci., C. Botany, **12**: 363. 1917.

Cols. hypophyllous, to 8 mm. diam. or confluent and more or less widely effuse, thin. Hyphae straight, cells mostly 17—30×5—7 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate or opposite, spreading, straight or bent, 13—17 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose, ovate or cylindric-clavate, 10—13×6—9 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, ampulliform, 17—20×6—7 μ. Ms. numerous, scattered, straight, simple, acute, to 550×8—10 μ. Ps. .cattered, verrucose, to 170 μ diam. Sp. oblong to elliäsoid, obtuse, 4-septate, slightly constricted, 35—40×14—16 μ.

On *Glycosmis cochinchinensis*, Philippines, PBS 25822, type.

(908) *Meliola kisubiensis* Hansf. var. *peleicola* Hansf., Sydowia **9**: 43. 1955.

Cols. hypophyllous, thin, subvelvety, effuse and confluent. Hyphae substraight to undulate. cells mostly 15—20×8—10 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate only, spreading or antrorse, often recurved, 15—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose, ovate or shortly cylindric, entire, straight or slightly bent, 12—16×8—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×8—10 μ. Ms. thinly

scattered, straight, simple. acute when fully mature, to 1000×11—14 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 52—58×22—25 μ.

On *Pelea* sp., Hawaii, Shear 679 p. p., type (S, ex USDA 71020).

(909) *Meliola kisubiensis* Hansf., Proc. Linn. Soc. London **158**: 33. 1946.

Cols. epiphyllous, dense. subcrustose, to 2 mm. diam., strongly parasitic, the leaf tissues slightly raised beneath the colony. Hyphae substraight to sinuous, cells mostly 15—20×8—11 μ, branching opposite, acute, close, densely reticulate. Ch. alternate, antrorse, straight or slightly bent, 21—20 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. ovate to clavate-cylindric, straight or bent. entire, or 2—3-rounded-angulose, 15—21×11—14 μ. Mh. few to numerous, closely crowded, opposite or alternate ampulliform 18—27×7—10 μ mixed with ch. Ms. thinly scattered and grouped around P. erect, straight, simple, subacute, to 640×9—12 μ. P. scattered, verrucose, to 270 μ diam., surface cells rounded, obtusely conoid or mammillate, to 18 μ high. Sp. subellipsoid, obtuse, 4-septate, rather strongly constricted, 50—57×22—27 μ.

On *Toddalia asiatica*, Uganda, Hansford 3645 p. p., type.

(910) *Meliola kisubiensis* Hansf. var. *bosistoae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 73. 1953.

Cols. mostly hypophyllous. dense, velvety, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 20—25×7—8 μ branching opposite at wide angles closely reticulate. Ch. alternate only, more or less bent, spreading or antrorse 18—25 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. ovate to cylindric. entire, often bent, 11—21×8—11 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform. 14—23×7—9 μ. Ms. few to numerous, straight, simple, acute or subacute, to 500×9—11 μ. P. in central group, verrucose, to 260 μ diam. Sp. oblong, obtuse, 4-septate, constricted 44—53×19—23×16—18 μ.

On *Bosistoa enodiformis* New South Wales Fraser 51 type.

(911) *Meliola kisubiensis* Hansf. var. *medicosae* Hansf. Proc. Linn. Soc. N. S. W. **78**: 73. 1953.

Cols. epiphyllous, dense, subcrustose, to 2 mm. diam. Hyphae substraight, cells mostly 15—20×8—10 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. alternate, rarely (less than 1%) opposite. slightly antrorse, straight or slightly bent, 20—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to cylindric-clavate. entire or rarely subangulose, usually straight, 15—22×10—14 μ. Mh. scattered amongst ch. opposite or alternate. ampulliform. Ms. few, scattered, straight, to 280×9—11 μ, obtuse to subacute; many colonies devoid of setae. P. scattered, verrucose, to 240 μ diam., each on radiate disc. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 50—56×20—23 μ.

On *Medicosma cunninghamii*, Queensland, C. T. White. s. n., type.

(912) *Meliola macropoda* Syd., Ann. Mycol. **24**: 296. 1926.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., dense. Hyphae substraight, cells mostly 25—50×9—11 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 32—42 μ long; stc. cylindric to cuneate, 10—12 μ long; hc. elongate ovate to cylindric, entire. 20—31×10—13 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform 25—34×7—10 μ, neck elongate. Ms. grouped around P., and thinly scattered over colony, straight, simple, to 600×10—12 μ, apex attenuate, obtuse to subacute. P. loosely scattered, verrucose, to 260 μ diam. Sp. wide ellipsoid, obtuse, 4-septate, constricted, 45—54×22—26 μ.

On *Zanthoxylum procerum*, Costa Rica, Sydow, Fung. costaric. 113-b, type; — On *Z.* sp., Panama, Stevens 424.

(913) *Meliola tecleae* Hansf. var. *toddaliae-asiaticae* Hansf., Proc. Linn. Soc. London **153**: 11. 1941.

Cols. epiphyllous, subdense, velvety, to 3 mm. diam. /Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, or in some colonies rarely opposite, 15—22 μ long, spreading, usually straight; stc. cylindric, 4—8 μ long; hc. cylindric to slightly clavate, entire, 10—18×8—12 μ. Mh. numerous, mixed with ch., opposite or alternate conoid to ampulliform, 15—22×7—10 μ. Ms. numerous, scattere. simple, acute, to 700×9—12 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×16—20 μ.

On *Toddalia asiatica*, Uganda, Hansford 2408 (type), 2527, 3120, 3353, 3187, 3246; On *T. asiatica* var. *floribunda*, India, Thirumalachar 875 p. p.

(914) *Meliola microthecia* Thuem., Flora 1876, p. 569.
= *Meliola thuemeniana* Stev., Ann. Mycol. **26**: 259. 1928.

Cols. amphigenous, thin, to 2 mm. diam. Hyphae undulate to crooked, cells 15—20×7—8 μ, branching alternate or irregular, closely reticulate. Ch. alternate, antrorse or spreading. straight or bent, 20—30 μ long; stc. cylindric, often bent, 6—10 μ long; hc. rarely ovate and entire, usually rounded-angulose to sublobate, 12—18×8—15 μ. Mh. separate, opposite or alternate, ampulliform, 12—18×8—10 μ. Ms. not numerous, grouped around P., simple, straight, acute, to 350×8—10 μ. P. in central group, verrucose, to 250 μ diam., surface cells conoid. Sp. ellipsoid to cylindric ,obtuse, 4-septate, slightly constricted, 40—50×16—20 μ.

On *Barosma scoparia*. South Africa. MacOwan 1260 in Thuemen, Mycoth. univ. 851. type: PRET 21001, 21000; — On *Vepris lanceolata*, South Africa, PRET 22391 p. p.

(915) *Meliola evodiicola* Hansf., Reinwardtia **3**: 105. 1954.

Cols. epiphyllous, to 3 mm. diam., thin. Hyphae undulate to flexuous, cells mostly 20—35 × 8—9 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate only, spreading or antrorse, 18—30 μ long, usually straight: stc. cylindric to cuneate, 5—12 μ long; hc. cylindric, ovate or slightly rounded-angulose, rarely irregular, usually straight, 10—19 × 9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 19—27 × 7—9 μ, neck elongate. Ms. very few, often absent, only in groups around P., simple, obtuse, straight or bent, not uncinate, to 280 × 8—10 μ. P. loosely scattered, each on radiate subiculum, verrucose, to 180 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 34—39 × 14—18 × 12—13 μ.

On *Evodia glabra*, Java, BO 12377, type.

(916) *Meliola atalayae* Doidge, Bothalia **4**: 846. 1948.

Cols. mostly epiphyllous, to 4 mm. diam., subdense. Hyphae undulate to sinuous, cells mostly 11—15 × 7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or very rarely opposite, spreading to antrorse, straight or bent, 14—18 μ long; stc. cylindric, 4—5 μ long; hc. ovate to cylindric-clavate, entire, rarely slightly angulose to sublobate, 10—13 × 10—11 μ. Mh. separate, alternate or opposite, ampulliform, 12—18 × 6—9 μ. Ms. scattered, mostly grouped around P., straight or slightly bent, simple, acute, to 240 × 7—8 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—35 × 11—14 μ.

On *Atalaya natalensis*, South Africa, PRET 33912, type.

(917) *Meliola monnieriae* Stev., Ann. Mycol. **26**: 244. 1928.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam. or confluent, thin. Hyphae undulate, branching opposite or irregular at acute angles, loosely reticulate, cells mostly 20—25 × 5—6.5 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 12—17 μ long; stc. cylindric, 3—6 μ long; hc. globose to ovoid, entire, 9—12 × 8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18 × 6—7 μ. Ms. few, mostly grouped around P., straight or slightly bent, simple, obtuse, to 280 × 7 μ. P. scattered, slightly verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—33 × 11—13 μ.

On *Monnieria trifolia*, British Guiana, Stevens 532, type (FLS. F).

Host Family 195. Simarubaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4230 Cols. thin; hyphae substraight; hc. entire to sublobate, oblong-clavate ..... *simarubae* (918)

3101.3220	Cols. thin; hyphae substraight; hc. subglobose, entire	*simarubicola*	(919)

Meliola

31¾3.4222	Cols. dense, velvety; hyphae undulate; hc. oblong, entire; ms. furcate or 2-4-dentate to 15 μ	*picrasmae*	(920)
3133.4221	Cols. thin to dense, subvelvety; hyphae straight; hc. narrow cylindric, entire; ms. 2-4-dentate to 7 μ	*hannoae*	(921)
3123.4232	Cols. dense, velvety; hyphae straight to sinuous; hc. ovate to rounded angulose; ms. arcuate to uncinate, acute	*falcatiseta*	(922)
3121.5332	Cols. dense, velvety; hyphae straight to undulate: hc. cylindric-clavate to sublobate; ms. arcuate to uncinate, obtuse to subacute	*irvingiae*	(923)
3112.5323	Cols. dense, velvety; hyphae straight or undulate; hc. small ovate to clavate-cylindric, mostly entire; ms. acute	*balanitis*	(924)
3113.3221	Cols. thin; hyphae straight; hc. ovate; ms. obtuse-attenuate	*harrisoniae*	(925)
3111.4232	Cols. dense, subvelvety; hyphae straight to undulate; hc. oblong, entire; ms. acute	*picramniae*	(926)

(918) *Asteridiella simarubae* Hansf., Sydowia Beih. **1**: 97. 1957.

Cols. epiphyllous, to 3 mm. diam. or widely confluent, thin, smooth. Hyphae substraight, branching opposite at wide angles, loosely to rather closely reticulate, cells mostly 25—35×7—8 μ. Ch. alternate, straight or bent, spreading, 20—27 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. oblong to clavate, entire, sinuous-crenulate or sublobate, straight or bent, 15—20×8—12 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 20—25×8—9 μ. P. in central group, rough, to 230 μ diam., surface cells obtuse conoid to mammillate, to 20 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 39—46×17—20 μ.

On *Simaruba tulae*, Porto Rico, Stevens 7588 (type), 3516, 7061 (FLS).

(919) *Asteridiella simarubicola* Hansf., Sydowia **11**: 49. 1958.

Cols. epiphyllous, to 5 mm. diam., thin, smooth. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse or spreading, straight or bent, 17—23 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. subglobose, entire, 11—15×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×7—8 μ. P. scattered, globose, verrucose, to 130 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—37×13—15 μ.

On *Simaruba* sp.. British Guiana, Stevens 309, type (FLS).

(920) *Meliola picrasmae* Hansf., Sydowia **9**: 21. 1955.

Cols. hypophyllous, dense, velvety, to 2 mm. diam. or confluent;

on upper surface smaller. Hyphae substraight to undulate, cells mostly 25—35×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, or to 20% opposite, at wide angles, straight or bent, 15—25 μ long; stc. cylindric, 3—7 μ long; hc. oblong with rounded apex, or clavulate, straight or bent, entire, 12—18×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—24×7—9 μ. Ms. thickly scattered, straight, to 450×7—9 μ, apex 2—4-dentate to 15 μ, or shortly reflexed-2-furcate, the branches to 15 μ long and 2-dentate. P. scattered, verrucose, to 190 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 40—46×15—16×12—13 μ.

On *Picrasma javanica*, Philippines, Elmer 10842, p. p., type.

(921) *Meliola hannoae* Deight., Sydowia **11**: 106. 1958.

Cols. amphigenous, to 5 mm. diam., thin to dense, slightly velvety. Hyphae straight, cells mostly 20—30×5—7 μ, branching opposite at wide angles, loosely reticulate, closer in old colonies. Ch. opposite or alternate, straight or slightly bent, spreading or slightly antrorse, 14—19 μ long; stc. cylindric, 3—6 μ long; hc. oblong with rounded apex, entire, 11—15×6—7 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 30—35×8—9 μ, neck elongate, bent. Ms. scattered and grouped around P., to 290×8—9 μ, apex shortly 2—4-dentate to 7 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 44—49×17—19 μ, middle cell slightly the largest.

On *Hannoa kleiniana*, Sierra Leone, Deighton 3872, 4564.

(922) *Meliola falcatiseta* Speg., Anal. Mus. Nac. Buenos Aires, **19**: 327. 1909.

Cols. amphigenous, to 2 mm. diam., dense. velvety. Hyphae substraight to undulate, branching opposite or alternate, acute to wide, becoming densely reticulate and subsolid, cells 15—25×7—9 μ. Ch. alternate or to about 5% opposite, antrorse or spreading, straight or bent, 22—30 μ long; stc. cylindric to cuneate, 5—14 μ long; hc. cylindric to clavate, entire, angulose or shallowly lobate, 14—20×10—13 μ. Mh. few, mixed with ch., alternate or opposite, conoid to ampulliform, 17—22×9—10 μ. Ms. numerous, bent to falcate-uncinate in upper half, very black, simple, acute, to 350×12—14 μ. P. closely scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×15—17 μ.

On *Castela tweedii*, Argentina, SPEG 1804, (type), 610, 17008; — On *C. coccinea*, Argentina, Lorentz 26.

In Sydowia **9**: 8. 1955, the writer described the Lorentz specimen as the type of "*Meliola alternipes* (Speg.) Hansf.", assuming it to be the type of *Meliola falcatiseta* Speg. var. *alternipes* Speg. This is incorrect, and I have since compared it with SPEG 1804, above, to find it identical. The host of the latter was originally given as *Moya ferox* (*Celastraceae*), but has been amended on the packet to *Castela*

tweedii. Spegazzini's variety *alternipes* was described on *Xylosma* (*Flacourtiaceae*), q. v., above.

(923) *Meliola irvingiae* Hansf., Proc. Linn. Soc. London **159**: 25. 1947.

Cols. amphigenous, dense, velvety, to 10 mm. diam. Hyphae substraight to undulate, cells mostly 15—30×7—9 μ, branching opposite or irregular, acute, closely reticulate and subsolid in centre. Ch. alternate only, more or less antrorse, usually slightly bent, 19—33 μ long, 19—33 μ long; stc. cylindric to cuneate, straight or bent, 5—13 μ long; hc. versiform, cylindric to clavate, oblong, angulose to irregularly sublobate, more or less bent, 13—21×10—16 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 17—21×8—10 μ. Ms. numerous, scattered, simple, subacute to obtuse, to 330×8—10 μ. upper part widely arcuate, uncinate or loosely coiled. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—52×17—21 μ.

On *Irvingia wombolu*, Congo Belge, Steyaert 45004, type.

(924) *Meliola balanitis* Hansf., Recueil I. N. E. A. C. 2: 37. 1945.

Cols. amphigenous, dense, velvety, to 1 mm. diam. Hyphae straight to undulate, cells mostly 15—208—9 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. mostly opposite, rarely alternate or unilateral, more or less antrorse, straight or bent, 16—28 μ long; hc. cylindric to subglobose, rounded to truncate at apex, rarely sublobate, 11—17×9—13 μ. Mh. few, mixed to ch., opposite or alternate, ampulliform. Ms. scattered, straight, simple, acute, to 550×9—11 μ. P. in close central group, verrucose, to 210 μ diam. Sp. cylindric, obtuse, 4-septate, 47—53×18—21 μ.

On *Balanites aegyptiaca*, Congo Belge, Hendrickx 2370, type.

(925) *Meliola harrisoniae* Hansf., Journ. Linn. Soc. London, **51**: 541. 1938.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae straight, cells 17—30×6 μ, branching opposite, acute, loosely reticulate. Ch. alternate or opposite, 12—14 μ long, usually straight, spreading or antrorse; stc. cylindric, 3—5 μ long; hc. globose to ovate, 8—11×7—9 μ, entire. Mh. few, mixed with ch., ampulliform. Ms. mostly grouped around P., not numerous, straight, simple, to 240×7—9 μ, apex attenuate but obtuse. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, 34—39×13—15 μ, slightly constricted.

On *Harrisonia abyssinica*, Uganda, Hansford 2014 (type), 2415, 2489, 3007, 3414, 3555.

(926) *Meliola picramniae* Hansf., Sydowia Beih. **1**: 114. 1957.

Cols. mostly hypophyllous, dense, subvelvety, to 3 mm. diam. Hyphae substraight to undulate, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly 20—25×6—8 μ. Ch. alternate, spreading, straight or slightly bent, 13—20 μ long;

stc. cylindric to cuneate, 3—7 μ long; hc. oblong, entire, 10—14×9—12 μ. Mh. mixed with ch., few, alternate, ampulliform, 15—20×7—8 μ. Ms. few to numerous, straight or slightly flexuous, simple, acute, to 490×11 μ. P. subaggregate in centre, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—48×15—17×12—13 μ.

On *Picramnia antidesma*, Costa Rica, Stevens 242-a, type (FLS).

Host Family 196. Burseraceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4220	Cols. thin; hyphae substraight; hc. ovate-cylindric, entire	*protiicola*	(927)

Meliola

3411.5321	Cols. dense, velvety; hyphae substraight to undulate; hc. angulose to stellate-lobate; ps. straight, obtuse; ms. obtuse	*canariicola*	(928)
3131.5323	Cols. thin; hyphae crooked; hc. cylindric, bent or angulose; ms. few-dentate	*protii*	(929)
3131.4333	Cols. subdense, velvety; hyphae straight to undulate; hc. cylindric, entire; ms. dentate to 15 μ	*burseracearum* var. *major*	(930)
3131.4222	Cols. thin; hyphae straight or undulate; hc. ovate-cylindric, straight or bent, entire; ms. 2-3-dentate to 15 μ	*burseracearum*	(93)
3111.4223	Cols. thin to subdense; subvelvety; hyphae substraight; hc. ovate-ellipsoid, entire; ms. acute	*canarii*	(932)
3111.4221	Cols. very thin; hyphae undulate; hc. ovoid to globose, entire; ms. obtuse	*garugae*	(933)

(927) *Asteridiella protiicola* (Batista & Gayao) Hansf., Sydowia **10**: 49. 1957.

= *Irenina protiicola* Batista & Gayao, Anal. IV Congr. Soc. Bot. Brazil, p. 94. 1953.

= *Meliola protiicola* (Bat. & Gay.) Ciferri, Mycopathologia **7**: 89. 1954.

Cols. amphigenous, to 12 mm. diam., thin, smooth. Hyphae substraight, cells 20—32×6—8 μ, loosely radiating-reticulate, branching opposite, acute. Ch. alternate, antrorse or spreading, straight, 20—25 μ long; stc. cylindric, 6—10 μ long; hc. ovate to cylindric, entire, 14—20×8—9 μ. Mh. mixed with ch., alternate, ampulliform, 18—24×8 μ. P. scattered, verrucose, to 180 μ diam., surface cells obtuse conoid, to 15 μ high by 25 μ diam. Sp. ellipsoid, obtuse, 4-septate constricted, 36—44×16—20 μ.

On *Protium heptaphyllum*, Brazil, Soares in Herb. Inst. Peq. Agron., Pernambuco 4163, type.

(928) *Meliola canariicola* Stev. ex Hansf., Sydowia Beih. **1**: 102. 1957.

Cols. amphigenous, dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight to undulate, branching alternate or irregular, acute, closely reticulate, cells mostly 25—35×8—9 μ. Ch. alternate, subantrorse, straight or bent, 35—45 μ long; stc. cuneate to cylindric, 12—20 μ long; hc. oblong to clavate, irregularly stellate-lobate to rounded-angulose, often bent, versiform, 22—30×8—9 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 20—28×8—9 μ. Ms. scattered and grouped around P., few, to numerous, straight or somewhat bent in upper half, not uncinate, simple, obtuse, to clavulate, to 300×9—10 μ. P. scattered, verrucose, to 190 μ diam.; ps. 0—8, spreading-erect, arising from sides and upper half, straight to slightly bent, obtuse to clavulate, smooth, to 145×8 μ, 2—4-septate, Sp. oblong, obtuse, 4-septate, constricted, 53—60×20—22 μ.

On *Canarium* sp., Philippines, PBS 34009, type (FLS).

(929) *Meliola protii* Stev., Ann. Mycol. **26**: 199. 1928.

Cols. amphigenous, thin to dense, to 10 mm. diam. Hyphae closely undulate, cells mostly 30—40×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or more scattered, spreading or antrorse-bent, 20—26 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to cylindric, sinuous in outline, straight or bent, 15—18×9—12 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 28—32×7—9 μ. Ms. scattered, straight, to 780×9—11 μ, apex with few short teeth, to 12 μ long. P. scattered, verrucose, to 155 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 47—54×18—22 μ, middle cell slightly the largest.

On *Protium panamense*, Panama, Stevens 583, type (FLS); — On *Hedwigia balsamifera*, Porto Rico in S., with narrower hc., and ms. dentate to 15 μ, or sometimes simple and acute; — On *Icica guianensis*, British Guiana, Stevens 146 (FLS).

(930) *Meliola burseracearum* Stev. var. *major* Hansf., Sydowia **11**: 53. 1958.

Cols. epiphyllous, subdense, velvety, to 4 mm. diam. Hyphae substraight to undulate, branching usually opposite at wide angles, closely reticulate, cells mostly 15—25×6—8 μ. Ch. alternate, spreading, straight or bent, 20—28 μ long; stc. cylindric, 5—9 μ long; hc. cylindric with rounded apex, straight, bent, or slightly sinuous, entire, 17—24×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—35×6—9 μ, neck elongate. Ms. numerous, straight, to 510×9—10 μ, apex variously dentate to 15 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 45—50×20—22 μ.

On *Tetragastris balsamifera*, San Domingo, Ciferri, Mycofl.

doming. exs. 197 (type); — On *Icica* sp., Trinidad, Stevens 936 p. p. (FLS), with looser colonies and very few ms.

(931) *Meliola burseracearum* Stev., Ann. Mycol. Berlin **26**: 199. 1928. (3131.4222)

Cols. hypophyllous, thin, to 20 mm. diam. Hyphae straight to slightly undulate, cells mostly 20—50×5—6 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate, spreading or antrorse-bent, 15—25 μ long; stc. cylindric, 3—6 μ long; hc. ovate, priiform or cylindric, straight or bent, 11—20×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—8 μ, neck elongate. Ms. fairly numerous, scattered, to 360×8—9 μ, apex rarely simple and acute, usually 2—3-dentate to 15 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 42—47× 17—18×13—15 μ, middle cell often the largest.

On *Tetragastris panamensis*, Panama, Stevens 1029, 1050, 1052, 773; — On *Protium guianense*, Trinidad, Baker 1883, 1372 (IMI); with cols. epiphyllous and sp. 43—49×18—20 μ; — On *Protium* sp., Surinam, K ex Schweinitz Herb.; — On *Icica* sp., Trinidad, Stevens 936 p. p. (FLS).

(932) *Meliola canarii* Syd., Ann. Mycol. **12**: 550. 1914.

= *Meliola nigro-rufescens* Sacc., Atti Accad. Ven.-Trent.-Istr. **10**: 60. 1914.

Cols. amphigenous, thin to subdense, to 8 mm. diam., thinly velvety. Hyphae substraight to undulate, cells mostly 20—35×7 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate, spreading or antrorse-bent, rarely retrorse, 22—32 μ long; stc. cylindric, 6—13 μ long; hc. ovate-ellipsoid, entire, straight or bent, 15—22× 10—13 μ. Mh. mixed with ch., few, opposite or alternate, conoid to ampulliform, 16—24×7—9 μ. Ms. scattered and grouped around P., straight, simple, obtuse to acute, up to 900×8—11 μ, those around P. usually not exceeding 200 μ long. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40— 48×17—20×15—16 μ.

On *Canarium villosum*, Philippines, PBS 20256 (type), Lee 54, Stevens 83, 512; — On *C. commune*, Amboina, Robinson 2072; — On *C. luzonicum*, Philippines, Stevens 1907, 1881, 1999; — On *C. ovatum*, Philippines, Stevens 92; — On *C.* sp., Philippines, PBS 23877, 8816, 18365, 16773, 2997, 23734, 9088, 24022, 27791, 34630, Baker, Fung. malay. 363, 547; — On *Bursera serrata*, Eqst Pakistan, A. Khan in IMI 62667.

(933) *Meliola garugae* Stev. & Rold., Philipp. Journ. Sci., **56**: 67. 1935.

Cols. very thin, hypophyllous, to 5 mm. diam. Hyphae undulate to sinuous, cells mostly 25—50×6—7 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate, spreading or antrorse,

straight or bent, 13—19 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to piriform, entire or rarely rounded-angulose, 10—14× 9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×7—8 μ. Ms. few, mostly grouped around P., straight, to 250× 6—7 μ, apex 2—3-dentate-cristate to 8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—43× 15—17 μ.

On *Garuga* sp., Philippines, Stevens 781, type (FLS, CUP).

Host Family 197. Meliaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3103.32×0	Cols. subdense; hyphae straight; hc. cylindric, small, entire	*pseudekebergiae*	(934)
3101.6330	Cols. dense; hyphae straightto undulate; hc. large, lobate	*bersamae*	(935)
3101.53×0	Cols. thin; hyphae undulate to sinuous; hc. large, ovate to lobate, often bent	*ekebergiae*	(936)
3101.32×0	Cols. thin; hyphae undulate to sinuous; hc. bent, irregularly lobate	*ekebergiae* var. *paraguayensis*	(937)
3101.4220	Cols. thin; hyphae substraight; hc. clavate to angulose; mh. separate	*entandrophragmae*	(938)
3101.4220	Cols. thin; hyphae substraight to undulate; hc. cylindric or subangulose; narrow	*lovoae*	(939)
3101.3230	Cols. subdense; hyphae sinuous; hc. small, globose to ovate, entire	*sandorici*	(940)

Meliola

3141.3221	Cols. thin, subvelvety; hyphae substraight; hc. ovate to clavate, entire; mh. separate; ms. 1-2-dichotomous, br. dentate	*swieteniae*	(941)
3133.5332	Cols. dense, velvety; hyphae undulate to crooked; hc. globose-ovate, entire; ms. 3-dentate	*banahaoensis*	(942)
31¾3.5231	Cols. subdense, subvelvety; hyphae undulate; hc. ovate-cylindric; ms. dentate to 40 μ	*khayae*	(943)
3133.4223	Cols. subdense, subvelvety; hyphae straight or undulate; hc. ovate-cylindric; ms. dentate to 20 μ	*khayae* var. *minor*	(944)
3133.4234	Cols. rather thin, velvety; hyphae straight to sinuous; hc. narrow conic to ovoid; ms. variously dentate-cristate	*trifurcata*	(945)
3133.4222	Cols. dense, velvety; hyphae sinuous; hc. ovate-oblong, entire; ms. dentate to 30 μ	*chorleyi*	(946)
3133.4221	Cols. thin; hyphae undulate; hc. subglobose, entire; ms. cristate-dentate	*turraeae*	(947)
3133.4221	Cols. dense, velvety; hyphae substraight; hc. subglobose-oblong, entire; ms. dentate	*macalpini*	(948)

3131.5332 Cols. dense, velvety; hyphae substraight; hc. cylindric, entire; ms. short-furcate or dentate *elodea* (949)

3131.4221 Cols. thin; hyphae straight to undulate; hc. ovate-oblong, entire; ms. cristate-dentate ... *turraeae* var. *eggelingii* (950)

31⅓3.3223 Cols. thin, subvelvety; hyphae undulate-crooked; hc. oblong to conoid, entire; ms. (a) long, simple, acute, (b) shorter, dentate ... *trifurcata* var *philippinensis* (951)

31⅓1.5333 Cols. dense, subvelvety; hyphae substraight; hc. cylindric, entire or sublobate, large; ms. obtuse, subacute or minutely dentate ..... *ptaeroxyli* (952)

31⅓1.5233 Cols. dense, velvety; hyphae substraight to sinuous; hc. ovate-cylindric, entire or lobate, large; ms. acute or dentate ..... *carapae* (953)

3123.4232 Cols. subdense, velvety; hyphae sinuous; hc. ovate-clavate; ms. acute, arcuate to uncinate *atro-velutina* (954)

3121.3221 Cols. dense, velvety; hyphae straight or sinuous; hc. small, globose-piriform; ms. uncinate or loosely coiled, obtuse..... *guareicola* (955)

31½3.4222 Cols. thin; hyphae crooked; hc. small, ovate-oblong; ms. obtuse, uncinate or loosely coiled..... *obvallata* (956)

33112.4221 Cols. dense; hyphae straight; hc. ovate-globose, crowded, entire; ms. acute..... *dysoxyli* (957)

3112.3223 Cols. subdense, thinly velvety; hyphae undulate-sinuous; hc. ovate to conoid, small, often bent; ms. acute..... *amoorae* (958)

3112.3222 Cols. dense, subvelvety; hyphae straight; hc. subglobose, ovate or piriform, entire; ms. acute..... *opposita* (959)

3112.3221 Cols. dense, crustose, velvety; hyphae straight; hc. globose-clavate; ms. acute ..... *opposita* var. *africana* (960)

3112.3221 Cols. dense; hyphae substraight; hc. small cylindric-clavate, entire; ms. acute ..... *aglaina* (961)

3112.3221 Cols. dense, subcrustose, subvelvety; hyphae straight; hc. cylindric-ovate, entire; ms. acute *ekebergiae* (962)

3113.5231 Cols. dense, crustose, velvety; hyphae straight; hc. crowded, globose, entire; ms. acute..... *trichiliae* (963)

3113.5322 Cols. thin, velvety; hyphae substraight to tortous; hc. oblong to irregular, entire to lobate; ms. acute ..... *walsurae* (964)

3113.4232 Cols. subdense, subvelvety, strongly parasitic; hyphae sinuous; hc. subglobose to ovate, small; ms. acute ..... *dysoxylina* (965)

3113.4223 Cols. thin to subdense; hyphae substraight to crooked; hc. subglobose to ovate; ms. obtuse or acute ..... *ceriopsidis* (966)

3113.4222 Cols. dense, velvety; hyphae substraight to sinuous; hc. cylindric, entire, often bent; ms. obtuse to subacute ..... *rickii* (967)

3113.3224 Cols. thin; hyphae substraight to crooked; hc. small, cylindric; ms. acute ..... *parvula* (968)

3111.6323	Cols. dense, subvelvety; hyphae substraight; hc. clavate-cylindric, entire, usually bent; ms. acute	*guareae* var. *major*	(969)
3111.5342	Cols. dense, crustose; hyphae substraight to sinuous; hc. clavate or lobate; ms. acute or obtuse, sometimes torulose	*bunyorensis*	(970)
3111.5333	Cols. dense, velvety; hc. clavate; ms. obtuse	*platysperma*	(971)
3111.5223	Cols. subdense, thinly velvety; hyphae straight; hc. large, globose-cylindric, entire; ms. acute	*bersamicola*	(972)
3111.5233	Cols. dense, velvety; hyphae sinuous; hc. ovoid to elongate, sublobate; ms. acute	*parasitica*	(973)
3111.5232	Cols. thin, subvelvety; hyphae sinuous; hc. globose-ovate, entire; ms. acute	*sinuosa*	(974)
3111.5232	Cols. dense, velvety; hyphae sinuous; hc. globose to cylindric, entire, rarely angulose; ms. acute	*guareina*	(975)
3111.4232	Cols. dense, velvety; hyphae crooked; hc. subglobose to ellipsoid, entire; ms. acute	*petrakii*	(976)
3111.4224	Cols. thin; hyphae crooked; hc. oblong to piriform, angulose; ms. obtuse	*meliacearum*	(977)
3111.4224	Cols. thin; hyphae undulate; hc. clavate-cylindric, entire; ms. acute	*dysoxylicola*	(978)
3111.4223	Cols. dense, crustose, subvelvety; hyphae straight; hc. cylindric-clavate, entire; ms. acute	*guareae*	(979)
3111.4223	Cols. subdense, velvety; hyphae substraight; hc. ovate-oblong, entire; ms. acute	*trichiliicola*	(980)
3111.4222	Cols. dense, subvelvety; hyphae sinuous to crooked; hc. ovate-oblong, entire; ms. obtuse	*leptochaeta*	(981)
3111.4222	Cols. dense, subvelvety; hyphae undulate to crooked; hc. subglobose-oblong, angulose or irregular; ms. acute	*zamboangensis*	(982)
3111.4221	Cols. thin, subvelvety; hyphae substraight; hc. ovate-clavate, entire; ms. acute	*heyneae*	(983)
3111.3222	Cols. thin; hyphae flexuous-sinuous; hc. ovate-clavate, mostly angulose; ms. acute	*togoensis* var. *angulata*	(984)
3111.3221	Cols. thin; hyphae substraight to sinuous; hc. subglobose-ovate, usually entire; ms. acute	*togoensis*	(985)
3111.3221	Cols. dense, subcrustose, subvelvety; hyphae substraight to crooked; hc. globose; entire; ms. abruptly acute	*aglaiicola*	(986)
3111.3221	Cols. thin; hyphae substraight; hc. ovate to subglobose, entire; ms. acute	*guareiella*	(987)

(934) *Asteridiella pseudekebergiae* Hansf., Sydowia **10**: 50. 1957.
= *Irene pseudekebergiae* Hansf., Sydowia **9**: 58. 1955.

Cols. epiphyllous, to 2 mm. diam., rather dense, smooth. Hyphae straight, cells mostly 15—25×6—7 μ, branching opposite, acute, regular, closely reticulate. Ch. mostly opposite, about 5% alternate, subantrorse, usually straight, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. cylindric or slightly clavate, entire, 9—12×7—8 μ. Mh.

mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ. P. scattered, verrucose, immature. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 33—39×15—16 μ.

On *Meliaceae* indet., Paraguay, Balansa 4761 p. p., type (S).

(935) *Asteridiella bersamae* Hansf., Sydowia **10**: 47. 1957.

= *Irenina bersamae* Hansf., Journ. Linn. Soc. London **51**: 268. 1937.

Cols. epiphyllous, dense, smooth, to 1 mm. diam. Hyphae sinuous, cells mostly 20—30×8—9 μ, branching alternate or unilateral, closely radiating-reticulate. Ch. alternate, antrorse or spreading, straight or bent, 30—45 μ long; stc. cylindric to cuneate, 7—17 μ long; hc. cylindric to clavate, angulose to irregularly lobate, often bent, 18—30×12—21 μ. Mh. mixed with ch., often numerous, mostly in centre of colony, ampulliform, to 25×8—10 μ. Setae none. P. in central group, verrucose, to 250 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 55—62×23—27 μ.

On *Trichilia heudelotii*, Togoland, Hughes 870 p. p.; Sierra Leone, Deighton 1015 p. p., 1965; Gold Coast, Deighton CB 944; — On *T. retusa*, Congo Belge, Bequaert 1495 p. p. (BRUX); — On *T.* sp., Uganda, Hansford 3157, 3443, 3541.

The type was described as on *Bersama* sp., Uganda, Hansford 1783, but the host determination is doubtful, and it is possibly a species of *Trichilia*. Deighton's specimens were formerly placed as *A. ekebergiae*, but appeat best as above.

(936) *Asteridiella ekebergiae* (Doidge) Hansf., Sydowia **10**: 47. 1957.

= *Irene ekebergiae* Doidge, Bothalia **4**: 193. 1941.

= *Irenina ekebergiae* (Doidge) Hansf. & Deight., Mycol. Paper, IMI, **23**: 42. 1948.

Cols. amphigenous, to 2 mm. diam., dense, smooth. Hyphae undulate to crooked, cells mostly 12—35×7—10 μ, branching usually opposite at varying angles, close, becoming densely reticulate. Ch. alternate, straight, or more commonly irregularly bent, 18—35 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. versiform, clavate, cylindric, or very irregular, often angulose to sublobate, rounded or truncate at apex, sometimes sharply bent, to uncinate, 17—23×10—18 μ. Mh. numerous, mostly separate, usually opposite, ampulliform, 20—25×8—10 μ, neck often elongate. P. scattered, verrucose, immature. Sp. broadly ellipsoid, obtuse, 4-septate, 47—58×22—28 μ.

On *Ekebergia pterophylla*, South Africa, PRET 25909, type.

(937) *Asteridiella ekebergiae* (Doidge) Hansf. var. *paraguayensis* Hansf., Sydowia **10**: 47. 1957.

= *Irene ekebergiae* Doidge var. *paraguayensis* Hansf., Sydowia **9**: 55. 1955.

Cols. epiphyllous, to 2 mm. diam., rather thin, smooth. Hyphae

substraight to flexuous or sinuous, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or less than 1% opposite, more or less bent to uncinate, 23—37 μ long; stc. cylindric, usually bent, 7—15 μ long; hc. versiform, bent to uncinate, angulose to irregularly lobate, 12—24×8—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—20×7—9 μ. P. scattered, immature. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted slightly, 35—40×15—17 μ.

On *Meliaceae* indet., Paraguay, Balansa 4761 p. p., type (S).

(938) *Asteridiella entandrophragmae* Hansf., Sydowia **10**: 47. 1957.

= *Irenina entandrophragmae* Hansf., Proc. Linn. Soc. London **157**: 171. 1946.

Cols. amphigenous, mostly epiphyllous, to 8 mm. diam., thin. Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 22—30 μ long; stc. cuneate, 5—10 μ long; hc. clavate to broadly triangular with rounded angles, or sublobate, 15—19×12—16 μ. Mh. separate, opposite or alternate, conoid to ampulliform, 15—18×6—7 μ. P. scattered, verrucose, to 140 μ diam., surface cells rounded to conoid. Sp. oblong, obtuse, 4-septate, constricted, 40—47×15—18 μ.

On *Entandrophragma* sp., Uganda, Hansford 2830, type; — On *Trichilia* sp., Uganda, Hansford 3018.

(939) *Asteridiella lovoae* Hansf., Sydowia **10**: 48. 1957.

= *Irenina lovoae* Hansf., Proc. Linn. Soc. London **157**: 171. 1948.

Cols. amphigenous, thin, to 5 mm. diam. Hyphae slightly undulate or substraight, cells mostly 25—40×7—8 μ, branching opposite or irregular at wide angles, loosely retidulate. Ch. alternate or unilateral, usually more or less bent, spreading, 20—25 μ long; stc. cylindric, 3—7 μ long; hc. clyndric to very slightly irregularly ovate, 18—20×8—11 μ, straight or slightly bent, entire. Mh. mixed with ch., opposite or alternate, ampulliform. P. scattered, each on a radiate subiculum of exhyphopodiate hyphae, verrucose, to 170 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, rather strongly constricted, 38—41×14—18 μ.

On *Lovoa brownii*, Uganda, Hansford 2914 (type), 2995, 3493.

(940) *Asteridiella sandorici* (Rehm) Hansf., Sydowia **10**: 50. 1957.

= *Meliola sandorici* Rehm, Philipp. Journ. Sci., C. Botany **8**: 391. 1913.

= *Irenina sandorici* (Rehm) Stev., Ann. Mycol. **25**: 458. 1927.

Cols. amphigenous, to 8 mm. diam., rather dense, smooth. Hyphae on lower surface crooked, straighter on upper surface, cells mostly 15—25×6 μ, branching opposite at wide angles, loosely reticulate, becoming closer in centre of mature colonies. Ch. alternate, spreading

or subantrorse, usually straight, 10—17 μ long; stc. cuneate to cylindric, 2—6 μ long; hc. globose to ovate, entire, 8—13×6—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 13—16×6—7 μ. P. loosely scattered, verrucose, to 210 μ diam., surface cells obtusely conoid, to 12 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—39×11—13 μ.

On *Sandoricum indicum*, Philippines, Baker, Fung. malay. 368, Sydow, Fung. exot. exs. 380, Baker in PBS 743 (type), PBS 2938, 16649, 1234; — On *S. koetjape*, Philippines, Stevens 442 (FLS).

(941) *Meliola swieteniae* Cif., Ann. Mycol. **31**: 153. 1933.

Cols. mostly epiphyllous, to 3 mm. diam., rather thin, subvelvety. Hyphae straight to undulate, cells mostly 20—25×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, or very rarely opposite, 13—20 μ long, subantrorse or spreading, usually straight; stc. cylindric to cuneate, 2—5 μ long; hc. ovoid to subglobose, entire, 10—15×8—10 μ. Mh. separate, opposite or alternate, ampulliform, 15—25×6—8 μ. Ms. scattered, straight, to 150 μ high by 6—8 μ thick below, apex 1—2-dichotomous, branches wide spreading, 1-ry to 50 μ, 2-ry to 20 μ, 3-ry to 8 μ, acute. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—39× 14—16 μ.

On *Swietenia mahagoni*, San Domingo, Ciferri, Mycofl. doming. exs. 184 type.

(942) *Meliola banahaoensis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 364. 1918.

Cols. hypophyllous, velvety, dense, to 8 mm. diam. Hyphae undulate to crooked, cells mostly 15—20×6—7 μ, branching irregular, usually alternate, acute, closely radiating-reticulate and almost solid. Ch. alternate or to 10% opposite, more or less antrorse, straight or bent, 14—22 μ long; stc. cylindric or cuneate, often antrorse-bent, 4—10 μ long; hc. ovate to globose, entire, 11—16×10—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. very numerous, closely scattered, straight, to 350×8—10 μ, apex rarely simple and acute, usually 3-dentate to 15 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—55×18—21 μ.

On *Dysocylum* sp., Philippines, PBS 28011, type.

(943) *Meliola khayae* Hansf., Journ. Linn. Soc. London **51**: 542. 1938.

Cols. amphigenous, to 5 mm. diam., subdense, sometimes velvety. Hyphae substraight to undulate, cells mostly 17—35×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or opposite, spreading, subantrorse or reflexed, straight or bent, 18—28 μ long; stc. short cylindric to cuneate, 5—8 μ long; hc. oblong to narrow ovate, entire, straight or bent, 15—20×8—10 μ. Mh. rare, mixed with

ch., alternate or opposite, ampulliform. Ms. numerous, straight, to 260 μ long, 8—10 μ wide below, apex 2-dichotomous, or furcate to 40 μ, branches dentate to 20 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—56×19—22 μ, cells equal.

On *Khaya antotheca*, Uganda, Hansford 1991, type; Hansford 2308; On *Meliaceae* indet., Congo Belge, Vanderyst 3296, 43298 (BRUX).

(944) *Meliola khayae* Hansf. var. *minor* Hansf. & Deight., Mycol. Paper, IMI, **23**: 43. 1948.

Cols. amphigenous, mostly epiphyllous, slightly velvety, thin to subdense, to 4 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 15—25×7—8 μ, branching opposite or irregular, at wide angles, closely reticulate in centre of older colonies. Ch. alternate or to 5% opposite, straight or usually irregularly bent, spreading or subantrorse, 17—23 μ long; stc. cylindric, 4—7 μ long; hc. cylindric, ovate or less commonly subconoid, usually more or less sharply bent or sometimes sinuous, apex obtuse to subacute, rounded, entire, 13—18×6—8 μ. Mh. numerous, scattered amongst ch., opposite or alternate, narrow ampulliform to conoid, 19—30×7—8 μ. Ms. numerous, scattered and grouped around P., straight, to 510×8—10 μ, apex rarely simple and acute, usually 2—4-dentate to 20 μ; the setae around P. often only about 160 μ long; P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 39—48× 16—19 μ.

On *Khaya grandifoliola*, Gold Coast, Deighton 2429, type, Hughes in IMI 44238, 44239.

(945) *Meliola trifurcata* Cif., Ann. Mycol. **36**: 226. 1938.

Cols. hypophyllous, velvety, to 30 mm. diam., rather thin. Hyphae straight to sinuous, cells mostly 20—30×5—7 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate or to about 10% opposite, spreading, usually bent, 17—23 μ long; stc. cylindric, 3—4 μ long; hc. narrow ovoid to conoid, usually bent, 14—18×6—8 μ, apex attenuate-rounded, entire. Mh. mixed with ch., alternate or opposite, narrow ampulliform to conoid, 23—30×6—7 μ, neck elongate. Ms. biform: (a) scattered over mycelium, straight, to 1200×8—10 μ, simple and acute, or 2—3-dentate to 15 μ, (b) around perithecia, straight, to 350×8—9 μ, apex 3—5-cristate-dentate to 10 μ, or 2-furcate to 18 μ with branches dentate. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 43—48×17—20×14—16 μ, the middle cell often slightly the largest.

On *Carapa guianensis*, San Dominog, Ciferri, Mycofl. doming. exs. 212, type; Trinidad, Baker 459, with spores 44—55 μ long; — On *Khaya* sp., Congo Belge, Steyaert 45006; — On *Carapa procera*, Sierra Leone, Deighton 436, 980 p. p., 1470 p. p.; Gold Coast,

Deighton CB 924, Hughes in IMI 41519, 41518, 41521, 41522; — On ? *Carapa* sp., Congo Belge, Vanderyst 32298, 32299 (BRUX); — On *Meliaceae* indet., Congo Belge, Vanderyst 32288 (BRUX).

(946) *Meliola chorleyi* Hansf., Journ. Linn. Soc. London **51**: 540. 1938. (3133.4222)

Cols. hypophyllous, to 10 mm. diam., dense, velvety. Hyphae sinuous, cells mostly 25—45×6—7 μ, branching opposite at acute angles, densely reticulate. Ch. alternate or opposite, usually bent, 14—20 μ long; stc. cylindric, 4—8 μ long; hc. cylindric to ovate, entire, 8—15×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×7—8 μ. Ms. numerous, scattered, straight, to 400×7—8 μ, apex 3—5-dentate to 30 μ, or sometimes furcate with shortly dentate b anches. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, slightly constricted, 4-septate, 42—49×11—13 μ, the middle cell sometimes the largest.

On *Trichilia* sp., Uganda, Hansford 2347, 2357, 2455.

The host of the type, Hansford 2035, was originally given as *Bersama* sp., but this is possibly incorrect, and it may have been a species of *Trichilia* (see below under *Melianthaceae*).

(947) *Meliola turraeae* Hansf., Proc. Linn. Soc. London **156**: 107. 1944.

Cols. epiphyllous, to 4 mm. diam., thin. Hyphae substraight to slightly undulate, cells mostly 25—30×6—7 μ, branching opposite, acute, loosely reticulate. Ch. opposite or alternate, usually straight, spreading or subantrorse, 12—16 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose, entire, 10—12×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. fairly numerous, scattered, to 240×7—9 μ, straight, apex 3—6-dentate to 10 μ, cristate. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—47×14—17 μ.

On *Turraea floribunda*, Uganda, Hansford 3174 p. p. (type), 2011.

(948) *Meliola macalpini* Sacc. & Syd., in Sacc., Syll. Fung. **14**: 471. 1899.

= *Meliola denticulata* McAlpine, Proc. Linn. Soc. N. S. W. **22**: 700. 1897, (non Wint.).

Cols. epiphyllous, 0.5 mm. diam., dense, velvety. Hyphae substraight, cells mostly 14—20×7—8 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or opposite, spreading or antrorse, straight or bent, 16—20 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose, ovate, or oblong with rounded apex, entire, 11—15×7—10 μ. Mh. mixed with ch., very few, opposite or alternate, conoid to ampulliform. Ms. closely scattered, straight, to 280×9—11 μ, apex slightly thickened and usually 3-dentate to 10 μ.

P. globose, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—48×17—18 μ.

On *Dysocylum* sp., New South Wales, Baker, July 1896, type.

(949) *Meliola elodea* Syd., Ann. Mycol. **26**: 87. 1928.

Cols. hypophyllous, to 8 mm. diam., subvelvety, fairly dense. Hyphae substraight to flexuous or sinuous, branching usually opposite at wide angles, becoming closely interwoven-reticulate, cells mostly 15—30×6—8 μ. Ch. alternate, or very rarely (less than 1%) opposite, spreading, usually more or less bent, 17—30 μ long; stc. cylindric, 3—8 μ long; hc. cylindric to obtusely conoid, usually bent to sinuous, entire, 14—25×7—9 μ. Ms. numerous, closely scattered, straight, to 400×8—10 μ, apex with 2—4 short branches to 12 μ long, and these usually 2—3-dentate to 6 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55×19—22 μ.

On *Xylocarpus granatum*, British North Borneo, Elmer 20018, type (F).

(950) *Meliola turaeae* Hansf. var. **eggelingii** Hansf., comb. n.

= *Meliola geniculata* Syd. & Butl., var. *eggelingii* Hansf., Journ. Linn. Soc. London **51**: 541. 1938.

Cols. hypophyllous, thin, to 10 mm. or more diam., or confluent. Hyphae substraight to sinuous, cells mostly 30—35×6—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate, distant, straight or bent, spreading or antrorse, 15—22 μ long; stc. cylindric, 3—9 μ long; hc. ovate to oblong or slightly clavate, entire, straight or bent, 10—15×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. rather numerous, scattered, straight, to 280×6—9 μ, apex 2—6-cristate-dentate to 13 μ, or very shortly furcate with dentate branches. P. scattered, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, 38—43×14—18 μ, slightly constricted.

On *Entandrophragma* sp., Uganda, Hansford 2307, type.

(951) *Meliola trifurcata* Cif. var. *philippinensis* Hansf., Sydowia **11**: 60. 1958. (31⅓3.3223)

Cols. amphigenous, mostly hypophyllous, thin, subvelvety, to 10 mm. diam. or confluent. Hyphae undulate to crooked, branching opposite or irregular, acute, loosely interwoven-reticulate, cells mostly 20—30×5—6 μ. Ch. opposite or alternate, spreading, often bent, 13—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. oblong to obtuse conoid, entire, 10—14×6—7 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 16—20×6—8 μ. Ms. biform: (a) scattered over mycelium, straight, simple, acute, to 900×9—11 μ, (b) grouped around P., straight, to 200×9 μ, apex irregularly 2—4-dentate, or shortly furcate and dentate to 15 μ. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 32—38×16—19 μ.

On *Dysoxylum* sp., Philippines, Stevens 1771 p. p., type (FLS).

(952) *Meliola ptaeroxyli* Doidge, Bothalia **4**: 199. 1941.

Cols. amphigenous, on indefinite brownish leafspots, to 4 mm. diam., dense, thinly velvety. Hyphae substraight, cells 8—20×8—12 μ, often slightly constricted at the septa, branching opposite or alternate, acute to wide, closely reticulate and nearly solid. Ch. alternate or unilateral, more or less antrorse, straight or sinuous-bent, 20—40 μ long; stc. cyinüric to cuneate, straight or bent, 5—12 μ long; hc. cylindric, clavate, or sublobate and irregular, rounded or trundate at apex, straight or bent, entire or with 2—3 obtuse lobes, 15—29× 10—18 μ. Mh. few to numerous, mixed with ch., alternate or rarely opposite, ampulliform, 20—28×7—10 μ. Ms. fairly numerous, scattered straight, to 750×8—10 μ, tapering to subacute or rounded apex 2.5—4 μ wide, frequently constricted or subrtoulose near tip, rarely minutely 2-dentate. P. scattered or subaggregate, verrucose, to 300 μ diam., surface cells convex to subconoid, to 25 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 50—60×20—24 μ.

On *Ptaeroxylon obliquum*, South Africa, PRET 30899, type.

(953) *Meliola carapae* Hansf. & Deight., Mycol. Paper, IMI **23**: 43. 1948.

Cols. hypophyllous, dense, velvety, to 10 mm. diam. Hyphae substraight to sinuous, cells mostly 25—35×8—10 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate or more scattered, straight or variously bent, spreading, antrorse or reflexec, 24—40 μ long; stc. cylindric or cuneate, 6—15 μ long; hc. cylindric with rounded apex, or irregularly and shallowly angulose to sublobate, often bent, versiform, 17—25×11—20 μ. Mh. mixed with ch., alternate or opposite, narrwo ampulliform to conoid, to 30×8—9 μ. Ms. numerous, scattered, straight, simple and acute, or 2—3-dentate to 20 μ, to 900×8—10 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, constricted, 51—58×19—23 μ.

On *Carapa procera*, Sierra Leone, Deighton 2133 (type), 1470, 980, Gold Coast, Hughes in IMI 41521, 44218.

(954) *Meliola atro-velutina* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 375. 1924.

Cols. hypophyllous, to 5 mm. diam., velvety, subdense. Hyphae sinuous, branching opposite or irregular, acute to wide, becoming closely radiating-reticulate and interwoven, cells mostly 20—30× 5—6 μ. Ch. alternate or opposite, straight or bent, antrorse to retrorse, 15—25 μ long; stc. cylindric, 3—12 μ long; hc. ovate to clavate, entire or slightly rounded-anguolse, usually bent, 10—16×6—9 μ. Mh. not seen. Ms. numerous, simple, acute, flexuous to broadly undcinate in upper half, to 400×9—10 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—48×15—17 μ.

On *Trichilia triphyllaria*, Argentina, SPEG 828, type.

(955) *Meliola guareicola* Stev., Illinois Biol. Monogr. **2**: 53. 1916.

Cols. epiphyllous, to 4 mm. diam., dense, velvety. Hyphae substraight to undulate, cells mostly 15—20×6—7 μ, branching opposite or irregular at wide angles, densely reticulate and nearly solid. Ch. alternate or very rarely (less than 1%) opposite, straight or bent, spreading or subantrorse, 13—20 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. globose, ovate or wide piriform, 9—14×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—18×6—8 μ. Ms. very numerous, erect, to 300×7—8 μ, upper half uncinate or loosely coiled, apex acute or obtuse, simple. P. scattered, verrucose, to 230 μ diam. Spl oblong to ellipsoid, obtuse, 4-septate, constricted, 32—37×11—12×10 μ.

On *Guarea trichilioides*, Porto Rico, Stevens 8166 (type), 8096, 7464 p. p., 5737 p. p., 8245, 2651, 4971, Whetzel 593, 3297 p. p.

(956) *Meliola obvallata* Syd., Ann. Mycol. **21**: 90. 1923.

Cols. hypophyllous, thin, effuse, covering most of leaf. Hyphae crooked, cells mostly 20—25×5 μ, branching irregular at wide angles, loosely reticulate-interwoven. Ch. alternate, or about 5% opposite, straight or bent, spreading, 10—13 μ long; stc. cylindric, 2—4 μ long; hc. ovate to oblong, entire, often bent, 6—11×5—6 μ. Mh. mixed with ch., mostly alternate, ampulliform, 18—22×5—7 μ. Ms. almost entirely grouped around P., forming a tangled tuft, fairly numerous, simple, obtuse, flexuous, uncinate or loosely coiled above, to 300×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, slightly constricted, 42—48×12—14 μ, the middle cell largest.

On *Aglaia palembanica*, Borneo, Ramos 2206, type (S, ex Sydow).

(957) *Meliola dysoxyli* Hansf., Proc. Linn. Soc. N. S. W. **78**: 92. 1953.

Cols. epiphyllous, to 1 mm. diam. or confluent, dense. Hyphae substraight, cells mostly 12—20 μ long; 7—8 μ wide, branching close, opposite at wide angles, very densely reticulate and almost solid. Ch. opposite, save where crowded, spreading or subantrorse, usually straight, 14—20 μ long; stc. cylindric, 2—5 μ long; hc. globose to wide ovate, entire, 11—15×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—10 μ. Ms. scattered, straight, simple, acute, to 450×10—11 μ. P. central, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 42—48×17—19 μ, the middle cell sometimes slightly the largest.

On *Dysoxylum* sp., Ceylon, Thwaites in K, type; — On *D. fraserianum*, New South Wales, Fraser 218, the colonies here on the petioles.

(958) *Meliola amoorae* Yates, Philipp. Journ. Sci., C. Botany, **13**: 364. 1918.

Cols. epiphyllous, numerous and widely confluent, rather dense, slightly velvety. Hyphae substraight, cells mostly 20—30×6—7nμ, branching usually opposite at wide angles, densely interwoven-reticulate. Ch. opposite save where crowded, straight or variously bent, usually spreading to somewhat antrorse, 11—15 μ long; stc. cylindric, 2—5 μ long; hc. from cylindric with rounded apex to bent ovate, or sinuous with attenuate-rounded apex, 7—11×7—8 μ. Mh. mixed with ch., opposite or alternate, bent ampulliform, 15—20×7—8 μ. Ms. thinly scattered and grouped around P., straight, simple, acute, to 600×7—9 μ. P. scattered, verrucose, to 160 μ diam., each on radiate subiculum of exhyphopodiate hyphae to 100 μ long. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 28—32×12—13×8—9 μ.

On *Amoora* sp., Philippines, PBS 28908, type.

(959) *Meliola opposita* Syd., Leafl. Philipp. Bot. 6: 1924. 1913.

Cols. mostly hypophyllous, dense, to 10 mm. diam. or confluent, thinly velvety. Hyphae substraight, cells mostly 20—25×6—9 μ, branching opposite at wide angles, densely reticulate. Ch. opposite, rarely alternate, more or less closely antrorse-bent, 15—19 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate to piriform, sometimes subglobose, entire, widely rounded at apex, 10—14×9—11 μ. Mh. mixed with ch., usually opposite, ampulliform to conoid, 15—20×7—8 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 500×9—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—39×14—16×12—14 μ.

On *Meliaceae* indet., Philippines, PBS 13659. type (S ex Sydow); On *Aglaia diffusa*, Philippines, Stevens (reported by Stevens & Roldan, Philipp. Journ Sci. 56: 62. 1935.)

(960) *Meliola opposita* Syd. var. **africana** Hansf., var. n.

Plagulae amphigenae, densae, crustosae, facile secedentes, usque ad 5 mm. diam., velutinae. Hyphae atrobrunneae, rectae, opposite lateque ramosae, dense reticulatae et subsolidae, cellulis plerumque 10—20×7—8 μ. Hyphopodia capitata opposita, stipata, recta, patentia 12—18 μ longa; cellula basali cylindracea vel cuneata 3—5 μ longa; cellula apicali globosa vel clavata, integra, 10—13×8—12 μ. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 16—20×6—8 μ. Setae myceliales numerosae, rectae simplices, acutae, usque ad 270×8—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam., subinde subaggregata in centro plagularum. Sporae atrobrunneae, oblongae vel ellipsoideae, obtusae, 4-septatae, leniter constrictae, 36—40×14—17 μ.

Hab. in foliis *Trichiliae* spec. indet., Uganda, Hansford 2315 (typus), 1968, 2356, 2453, 2454, 2574, Dummer 3920; — in foliis *Trichiliae prieurianae*, Gold Coast, Hughes in IMI 37147, 37148.

(961) *Meliola aglaina* Hansf., Sydowia **9**: 59. 1955.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae substraight, cells mostly 10—20×6—8 μ, branching usually opposite at wide angles, densely retuculate and becoming almost solid. Ch. opposite, somewhat antrorse, straight or slightly bent, 13—18 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. cylindric to clavulate, entire, often very slightly bent above, 9—14×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. few, grouped around P., often very few or none, straight, simple, acute, to 290×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 32—37×16—18×12—13 μ.

On *Aglaia* sp., Philippines, PBS 8884 p. p., type.

(962) *Meliola ekebergiae* Hansf., Journ. Linn. Soc. London **51**: 274. 1937.

Cols. epiphyllous, to 3 mm. diam. or often confluent, dense, subcrustose. Hyphae straight, cells mostly 17—30×7—8 μ, branching opposite, acute, densely reticulate and becoming almost solid. Ch. opposite save where crowded, somewhat antrorse, straight or slightly bent, 17—22 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. oblong to narrowly ovate, entire, usually straight, 11—15×6—9 μ. Mh. mixed with ch., opposite, ampulliform. Ms. numerous, straight, simple, acute, to 260×8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—37×14—16 μ.

On *Ekebergia* sp., Uganda, Hansford 1828 (type), 1966, 1842, 2007, 2107, 2396, 3005; — (? on *Bersama* sp., Uganda, Hansford 3256).

(963) *Meliola trichiliae* Beeli, Bull. Jard. Bot. Bruxelles, **7**: 99. 1920.

Cols. epiphyllous, dense, subvelvety, to 4 mm. diam. Hyphae substraight to undulate, branching opposite at wide angles, densely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate or opposite, mostly alternate, straight or bent, antrorse to recurved, 18—22 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose, cylindric or clavulate, entire, 12—16×10—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 13—20×7—9 μ. Ms. fairly numerous, straight, simple, acute, to 300×10—11 μ. P. scattered, slightly verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—51×15—18 μ.

On *Trichilia retusa*, Congo Belge, Bequaert 1495, type (BRUX).

(964) *Meliola walsurae* Stev. ex Hansf., Sydowia **11**: 61. 1958.

Cols. hypophyllous, to 15 mm. diam. or widely confluent, thin, velvety. Hyphae substraight to tortuous, branching opposite or irregulat at wide angles, loosely interwoven- reticulate, the more superficial hyphae nearly straight, cells mostly 20—30×5—6 μ. Ch. alternate or opposite, spreading, usually bent to tortuous, 20—35 μ long;

stc. cylindric, 6—18 μ long; hc. oblong and entire, to irregular and shallowly lobate, versiform, 12—20×6—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 23—37×6—8 μ, neck elongate. Ms. numerous, scattereed, straight, simple, acute, to 330×7—8 μ. P. scattered, verrucose, to 165 μ diam. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 44—54×16—21 μ.

On *Walsura* sp. Philippines, PBS 36500, type (FLS).

(965) **Meliola dysoxylina** Hansf., nom. n.

= *Meliola dysoxylicola* Hansf., Reinwardtia **3**: 92. 1954, (non Hansf., Proc. Linn. Soc. N. S. W. 1953).

Cols. amphigenous, mostly hypophyllous on main veins, strongly parasitic and causing a leafspot on opposite surface, to 2 mm. diam., or confluent into elongate patches, rather dense, subvelvety. Hyphae crooked, cells mostly 20—30×6 μ, branching opposite or irregular, at wide angles, closely reticulate. Ch. alternate or opposite (5—40%), spreading, usually straight, 10—16 μ long; stc. cylindric, 2—4 μ long; hc. subglobose to ovate, rounded to obtuse-attenuate at tip, entire, 8—12×6—8 μ. Ms. few to numerous, scattered and grouped around P., more or less straight, simple, acute, to 360×7—8 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 38—45×16—18 μ.

On *Dysoxylum* sp., Borneo, Clemens 29467, type (= BO 13565).

(966) *Meliola ceriopsidis* Hansf., Sydowia **10**: 68. 1957.

Cols. hypophyllous, thin to subdense, to 6 mm. diam. Hyphae crooked to substraight, branching opposite at wide angles, loosely to closely interwoven-reticulate, cells mostly 15—20×6—7 μ. Ch. alternate or opposite in varying proportions, spreading to subantrorse, straight or bent, 12—18 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. subglobose to ovate, entire, 9—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×7—8 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse to acute, to 700×7—9 μ, gradually attenuate upwards. P. scattered, globose, verrucose, to 140 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 36—41×16—18 μ.

On *Ceriopsis tagal*, British North Borneo, Elmer 20046 (F).

On *Ceriopsis tagal*, British North Borneo, Elmer 2046 (F).

(967) *Meliola rickii* Hansf., Proc. Linn. Soc. London **165**: 176, 1955.

Cols. amphigenous, mostly epiphyllous, dense, to 2 mm. diam. Hyphae substraight to sinuous, cells mostly 15—20×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or alternate, straight or bent to subuncinate, 13—22 μ long; spreading or antrorse; stc. cylindric, straight or bent, 3—6 μ long; hc. cylindric with widely rounded apex, straight or often sharply bent, entire, 10—16×7—10 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 16—22×7—9 μ. Ms. numerous, closely scattered, straight, simple, obtuse, to

subacute, 250—320×8—9 μ. P. scattered or subaggregate, slightly verrucose, to 175 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—45×14—15 μ, the middle cell slightly the largest.

On *Meliaceae* indet., Brazil, Rick 34 (S), type.

(968) *Meliola parvula* Syd., Leafl. Philipp. Bot. **6**: 1925. 1913.
= *Meliola aglaiae* Syd.. Philipp. Journ. Sci., C. Bot., **9**: 159. 1914.

Cols. mostly hypophyllous, thin, spreading and widely confluent. Hyphae substraight to crooked, cells mostly 25—30×5—6 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. opposite or alternate, straight or slightly bent, 11—17 μ long; stc. cylindric, 2—4 μ long; hc. oblong to ovate, apex rounded or slightly attenuate, entire, usually straight. 10—14×6—7 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 12—21×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 700×7—9 μ. P. loosely scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 28—36×14—15×11—12 μ.

On *Meliaceae* indet., Philippines, PBS 13452, type;

On *Aglaia* sp., PBS 8884 p. p. (type of *M. aglaiae*), Clemens 1579.

(969) *Melioïa guareae* Speg. var. *major* Hansf., Sydowia **10**: 74. 1957.

Cols. epiphyllous, dense, to 1 mm. diam., subvelvety. Hyphae substraight, branching opposite at wide angles, becoming closely reticulate, cells mostly 25—30×10—11 μ. Ch. alternate, usually bent, spreading or antrorse, 25—40 μ long; stc. cylindric, 7—14 μ long; hc. cylindric to clavate, usually bent to uncinate or sinuous, entire or slightly rounded-angulose, 18—28×12—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×9—10 μ. Ms. grouped around P. and scattered over mycelium, straight, simple, acute, to 750×11—12 μ. P. in loose central group, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 56—64×20—24 μ.

On *Guarea* sp., Argentina, Rodrigues in SPEG 1223 p. p., type.

(970) *Meliola bunyorensis* Hansf., Journ. Linn. Soc. London **51**: 539. 1938.

Cols. mostly hypophyllous, dense, velvety, crustose, to 7 mm. diam. or sometimes confluent. Hyphae substraight to sinuous, cells mostly 15—25×7—10 μ, branching usually opposite at wide angles, densely reticulate and almost solid. Ch. alternate, straight or bent, more or less antrorse, 18—35 μ long; stc. cylindric to cuneate, 6—14 μ long; hc. ovate, clavate, or shallowly lobate, 15—24×10—22 μ. Mh. mixed with ch., numerous in centre of colony, opposite or alternate, ampulliform. Ms. numerous, straight, simple, acute to obtuse, sometimes torulose at apex, to 340×9—11 μ. P. scattered, verrucose, to 340 μ diam. Sp. ellipsoid to oblong, obtuse, 4-septate, constricted, 47—53×18—22 μ.

On *Entandrophragma angolense*. Uganda, Hansford 2309, type.

(971) *Meliola platysperma* Theiss., Broteria **12**: 23. 1914.

Cols. rounded, to 4 mm. diam. Hyphae densely interwoven, branching opposite, cells about 25×10 μ. Ch. alternate, elongate-clavate, to 27 μ long; hc. 12—14 μ wide. Mh. usually opposite, ampulliform. Ms. numerous, straight, simple, obtuse, to 700×10 μ. P. verrucose, to 280 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 50—56×24—28 μ.

On ? *Guarea* sp., Brazil, Rick, type.

Specimens of this species have not been traced by the present author.

(972) *Meliola bersamicola* Hansf., Journ. Linn. Soc. London, **51**: 270. 1937.

Cols. amphigenous, dense, somewhat velvety, to 5 mm. diam., sometimes crustose and easily secedent. Hyphae straight, cells mostly 20—30×7—10 μ, branching opposite, subrectangular, becoming densely reticulate and almost solid in centre. Ch. alternate, straight, spreading, 17—24 μ long; stc. cylindric, 3—6 μ long; hc. globose to oblong, entire, 12—18×11—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform to conoid, 15—20×8—10 μ. Ms. few to very numerous, scattered, straight, simple, acute, to 800×9—14 μ. P. scattered, verrucose, to 250 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 47—57×17—20×15—17 μ.

On *Trichilia heudelotti*, Sierra Leone, Deighton 2014, 1015; Gold Coast, Hughes 870 p. p.; — On *T.* sp., Uganda, Hansford 3434, 3551; — On *Entandrophragma* sp., Uganda, Hansford 2870; — On *Guarea* sp., Argentina, SPEG 1223 p. p.

The host of the type specimen was given as *Bersama* sp.; it is possible that it is a species of *Trichilia*.

(973) *Meliola parasitica* Stev., Ann. Mycol. **26**: 282. 1928.

Cols. hypophyllous, dense, to 10 mm. diam., causing a leafspot visible on upper surface. Hyphae sinuous, branching opposite at wide angles, closely reticulate and becoming nearly solid in centre, cells mostly 15—25×6—7 μ. Ch. alternate, spreading or slightly antrorse, often bent, 14—24 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovoid to oblong, often bent, entire or rounded-angulose, 10—18×10—13 μ. Mh. mixed with ch., very few, opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. scattered, straight, to 900×7—10 μ, apex simple and acute, or less commonly 2—3-dentate to 7 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—53×17—19 μ.

On *Guarea* sp., British Guiana, Stevens 625, type (FLS).

(974) *Meliola sinuosa* Doidge, Trans. Roy. Soc. South Africa **5**: 735. 1917.

Cols. amphigenous, mostly hypophyllous, rather thin, subvelvety, to 5 mm. diam. Hyphae undulate to sinuous, often slightly constricted

at the septa, cells mostly 18—44×5—11 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate, straight or bent, spreading, subantrorse or slightly retrorse, 18—25 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. globose, ovate or bent cylindric, entire or rarely rounded-angulose. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—7 μ. Ms. fairly numerous, scattered, simple, straight, acute, to 350×8—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 48—55× 15—18 μ, the middle cell often slightly the largest.

On *Trichilia emetica*. South Africa, PRET 1783, 8786, 17771.

(975) **Meliola guareina** Hansf., sp. n. (3111.5232)

Plagulae hypophyllae, usque ad 10 mm. diam., parasiticae, densae, velutinae. Hyphae atrobrunneae, sinuosae vel tortuosae, opposite acuteque ramosae, dense intertexto-reticulatae, cellulis plerumque 20—30×7—8 μ. Hyphopodia capitata alternata, recta vel varie curvata, patentia, antrorsa vel retrorsa, 17—25 μ .onga; cellula basali cylindracea vel cuneata, recta vel cruvata, 4—8 μ longa; cellula apicali flobosa vel cylindracea, apice rotundata, 13—20×11—14 μ. Hyphopodia mucronata pauca, illis capitatis commixta, plerumque alternata, ampullacea. Setae myceliales numerosae, rectae, simplices, acutae, usque ad 450×8—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 210 μ diam. Sporae atrobrunneae, oblongae, obtusae, 4-septatae, constrictae, 45—52×18—20 μ.

Hab. in foliis *Guareae* spec. indet., Rio Grande do Sul, Brazil, Rick, Fung. autr.-amer. 99 (typus); Rick s. n., 1907 and 1909 (S, F).

(976) *Meliola petrakii* Stev. & Rold., Philipp. Journ. Sci **56**: 65. 1935.

= *Meliola petriolaris* Petr., Ann. Mycol. **29**: 185. 1931, non Doidge.

Cols. on petioles and primary veins, dense, velvety, 2—6 mm. long, or confluent. Hyphae sinuous to crooked, creeping through the tomentum of petiole, septate, 5—8 μ wide. Ch. alternate, more or less antrorse, few; stc. 2—3 μ long; hc. wide ovate. ellipsoid, or subglobose, entire, 10—12×9—11 μ. Mh. not seen. Ms. very numerous, straight, simple, obtuse to acute, to 320×9—11 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong, obtuse. 4-septate, constricted, 40—48× 16—18 μ.

On *Dysoxylum cumingianum*, Philippines. Clemens 641 p. p., type.

Known to the present author only from the original description.

(977) *Meliola meïiacearum* Stev. & Rold.. Philipp. Journ. Sci.. **56**: 66. 1935.

Cols. thin, hypophyllous, to 20 mm. diam. Hyphae crooked cells mostly 30—45×6—7 μ, branching opposite or irregular at varying angles, loosely reticulate-interwoven. Ch. alternate or more scattered,

spreading, straight or bent, 25—35 μ long; stc. cylindric, 6—14 μ long; hc. ovate to clavate, apex rounded or truncate, sometimes rounded-angulose, 17—24×11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 25—33×8—9 μ, neck elongate. Ms. grouped around P., flexuous, not uncinate, simple, obtuse, to 1500×10—11 μ, gradually attenuate to 3 μ at apex. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—48×16—17 μ.

On *Dysoxylum cumingianum*, Philippines, Stevens 824, 1767 (FLS, CUP).

(978) *Meliola dysoxylicoïa* Hansf., Proc. Linn. Soc. N. S. W., **78**: 62. 1953.

Cols. hypophyllous, to 1.5 mm. diam., rather thin. Hyphae undulate to sinuous, cells mostly 25—30×6—8 μ, branching usually opposite, acute, loosely reticulate. Ch. alternate, rarely (less than 1%) opposite, more or less bent, antrorse or spreading, 15—25 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. cylindric to clavate, rarely subglobose, entire or very slightly rounded-angulose. 10—19×7—11 μ. Mh. mostly separate, mixed with a few ch., opposite or alternate, few, ampulliform. Ms. scattered, straight, simple, acute, to 1100×8—9 μ. P. scattered, verrucose, immature. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 42—46×17—19 μ.

On *Dysoxylum* sp., New South Wales, Baker, July 1896, type.

(979) *Melioïa guareae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 42. 1913.

Cols. epiphyllous, to 10 mm. diam. or confluent, dense, crustose, slightly velvety. Hyphae straight, cells mostly 25—35×7—10 μ, branching opposite, subrectangular, loosely to closely reticulate. Ch. alternate, spreading, often bent, 22—30 μ long; stc. cylindric, 3—8 μ long; hc. ovate to cylindric, entire, often bent, 16—23×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×8—10 μ. Ms. scattered and grouped around P., straight, simple, acute, to 600×9—11 μ. P. scattered, slightly verrucose, to 210 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—47×18—21 μ.

On *Guarea balansae*, Argentina, SPEG 849, type; 1824; — On *G. trichilioides*, Porto Rico, Whetzel 2564, 2498 (CUP), Stevens 7464, 4971 p. p., 8166 p. p., 8096 p. p., 5757 p. p., 5691; — On *G.* sp., Argentina, Rodriguez in SPEG 1223 p. p.

The Porto Rican specimen, Stevens 7464 has most ms. 2—3-dentate to 10 μ, while the Whetzel collections have the great majority of ms. simple and acute, as in the type.

(980) *Meliola trichiliicoïa* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 366. 1924.

Cols. mostly hypophyllous, to 3 mm. diam., subdense, velvety. Hyphae substraight to slightly undulate, branching opposite at wide angles, becoming closely interwoven-reticulate, cells mostly 15—20×

6—8 μ. Ch. alternate (very rarely opposite), more or less antrorse, usually straight, 13—19 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to oblong, entire, 10—15×7—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—18×7—9 μ. Ms. scattered and grouped around P., straight or slightly bent, simple, acute, to 800×10 μ. P. scattered, verrucose, to 180 μ diam. Sp. narrow ellipsoid, obtuse, 4-septate, constricted, 44—50×16—20 μ.

On *Trichilia catigna*, Argentina, SPEG 627, type; SPEG 605 has sp. 47—53×18—21 μ.

(981) *Meliola leptochaeta* Syd., Ann. Mycol. **15**: 187. 1917.

Cols. hypophyllous, minute, or numerous and widely confluent, following the main veins of the leaf, dense, subvelvety. Hyphae sinuous to crooked, cells 18—40×4.5—6 μ, branching opposite or irregular, at wide angles, closely interwoven-reticulate. Ch. alternate or to 1% opposite, straight or bent, antrorse to retrorse, 12—19 μ long; stc. 3—7 μ long, cylindric, often bent; hc. ovate, oblong or sinuous-bent, entire, 8—12×7—9 μ. Mh. mixed with ch., opposite or alternate ampulliform. 18—25×7—9 μ, neck elongate. Ms. scattered and grouped around P., to 340×7—9 μ, gradually attenuate to 2.5—3 μ at obtusely rounded apex, straight or slightly flexuous above. P. scattered, verrucose, to 150 μ diam. Sp. oblong to narrowly ellipsoid, obtuse, 4-septate, slightly constricted, 35—42×12—14 μ, the central cell often slightly the largest.

On *Vavaea* sp., Philippines, PBS 25009, type.

(982) *Meliola zamboangensis* Hansf., Sydowia Beih. **1**: 119. 1957.

Cols. amphigenous, dense, subvelvety, to 3 mm. diam., or widely confluent. Hyphae undulate to crooked, branching opposite at varying angles, densely reticulate, cells mostly 15—25×7—8 μ. Ch. alternate, usually bent, antrorse to retrorse, 20—25 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. subglobose to oblong, often bent, rounded-angulose to slightly irregular, 14—18×10—15 μ. Mh. separate, opposite or alternate, ampulliform, 13—17×7—9 μ. Ms. scattered, straight, simple, acute, to 230×9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×15—17×13 μ.

On *Dysoxylum* sp., Philippines, PBS 36345, type (FLS).

(983) *Meliola heyneae* Hansf. & Thirum., Farlowia **3**: 294. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent, thinly velvety. Hyphae substraight, cells mostly 15—20×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, slightly antrorse, usually straight, 17—21 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. ovate to cylindric or clavulate, entire, 12—16×8—10 μ. Mh. mixed with ch., fairly numerous, opposite or alternate, conoid to ampulliform, 15—20×7—9 μ. Ms. mostly grouped around P., straight, simple, acute, to 300×7—8 μ. P. scattered. each on radiate

subiculum, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 35—43×15—19 μ.

On *Heynea trijuga*, India, Thirumalachar 874, type.

(984) *Meliola togoensis* Hughes var. *angulata* Hughes, Mycol. Paper, IMI **50**: 38. 1953.

Cols. hypophyllous, to 15 mm. diam. or confluent, rather thin, sometimes subvelvety. Hyphae sinuous to flexuous, cells 19—44× 6—10 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, straight or sharply bent, spreading or mostly antrorse, 18—32 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. versiform, ovate to clavate, irregularly angular, or sometimes entire, usually more or less bent, 12—20×11—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. scattered, few to numerous, straight or slightly bent, simple, acute, to 350×6—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—40×14—17 μ.

On *Trichilia prieuriana*, Gold Coast, Hughes in IMI 37146-a (type), 37144, 37149, 37148.

(985) *Meliola togoensis* Hughes, Mycol. Paper, IMI **50**: 37. 1953.

Cols. amphigenous, mostly hypophyllous, to 10 mm. diam. or confluent. Hyphae sinuous to substraight, cells 20—27×6—8 μ, opposite or irregularly branched at wide angles, loosely reticulate. Ch. alternate, straight or bent, usually slightly antrorse, sometimes retrorse or spreading, 16—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to ovate, entire or sometimes slightly rounded-angulose, 11—18×10—12 μ. Mh. few, mixed with ch., opposite or alternate ampulliform, 12—20×7—8 μ. Ms. scattered, simple, acute, straight or slightly bent, to 250×8—10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, constricted, 37—39×12—14 μ.

On *Trichilia heudelotii*, Gold Coast, Hughes in IMI 37145, 37142, 37143; Sierra Leone, Deighton 991; — On *Guarea* sp., Argentina, Rodriquez in SPEG 1905 p. p.

(986) *Meliola aglaiicola* Hansf., Reinwardtia **3**: 92. 1954.

Cols. amphigenous, to 1 mm. diam., dense, subcrustose, thinly velvety. Hyphae substraight to crooked, cells mostly 10—15×7—8 μ, branching opposite at wide angles, closely reticulate and almost solid in centre. Ch. alternate, spreading, straight, 13—16 μ long; stc. cylindric, 2—5 μ long; hc. globose, entire, 9—13×9—13 μ Mh mixed with ch., alternate or opp9site ampulliform 10—15×7—10 μ. Ms. closely scattered, straight simple abruptly acute to 170×8—9 μ. P. scattered verrucose to 160 μ diam. Sp. oblong to subellipsoid obtuse 4-septate slightly constricted 33—38×15—16 μ.

On *Aglaia* sp. Borneo. Clemens 28718 (= BO 13561), type.

(987) *Meliola guareiella* Hansf., Sydowia Beih. **1**: 109. 1957.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight, branching opposite, acute to wide, loosely interwoven-reticulate, cells mostly 25—40×5—6 μ. Ch. alternate, subantrorse, straight or bent, 12—16 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to subglobose, entire, 10—12×7—9 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—22×7—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 280×7 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—36× 13—14×10—12 μ.

On *Guarea* sp. Argentina, Spegazzini in Herb. FLS, 5172, type.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3¾03.4220	Cols. thin; hyphae sinuous to crooked; hc. irregular to lobate; ps. 0—15, obtuse, to 180 μ	*wrightii*	(988)
3401.3220	Cols. thin; hyphae substraight to undulate; hc. globose, entire; ps. few, obtuse, substraight, to 100 μ	*araneosa*	(989)
3¾01.3220	Cols. thin; hyphae substraight to undulate; hc. ovate-cylindric, entire; ps. 0—12, obtuse, straight or bent, to 140 μ	*cupaniae*	(990)
3301.4220	Cols. thin; hyphae undulate to sinuous; hc. large, cylindric to irregular, entire to lobate; ps. 0—8, obtuse, uncinate, to 130 μ	*cupaniicola*	(991)

Asteridiella

3103.4230	Cols. dense; hyphae substraight; hc. subglobose-piriform, entire; P-cells rounded-conoid	*dodonaeae*	(992)
3103.4220	Cols. dense; hyphae straight; hc. ovate-cylindric, entire; P-cells obtuse conoid, to 30 μ high; sp. ellipsoid	*guatemalensis*	(993)
3102.4330	Cols. thin; hyphae straight; hc. ovate-cylindric, entire; P-cells obtuse conoid, to 20 μ high; sp. ellipsoid	*tersa*	(994)
3102.2220	Cols. thin; hyphae straight; hc. ovate-cylindric, entire; sp. ellipsoid	*bomplandii*	(995)
3101.4230	Cols. very dense; hyphae substraight to crooked; hc. oblong-piriform, entire to sublobate; sp. ellipsoid	*hypelates*	(996)
3101.4230	Cols. dense; hyphae substraight to undulate; hc. clavate, angulose to lobate; sp. ellipsoid	*chardoniana*	(997)
3101.3220	Cols. thin; hyphae substraight to undulate; hc. clavate-cylindric, entire; sp. oblong to ellipsoid	*cupaniae*	(998)

Meliola

3143.4221	Cols. dense, subvelvety; hyphae substraight to undulate; hc. shallowly 3-lobate; ms. variously dentate-furcate	*sapindacearum*	(999)

3143.4221 Cols. dense, subvelvety; hyphae straight; hc. cylindric-clavate, entire; ms. 1—2-dichotomous, br. short, reflexed ..... *crucifera* (1000)

31¾3.3222 Cols. thin, subvelvety; hyphae sinuous; hc. cylindric to subconoid, entire; ms. dentate-furcate to 24 μ ..... *campylopoda* (1001)

31¼3.4221 Cols. dense, velvety; hyphae sinuous; hc. ovate-oblong, entire or sinuate; ms. acute or 2—3-furcate to 42 μ..... *lychnodisci* (1001a)

3133.5221 Cols. dense, subcrustose; hyphae straight or crooked; hc. globose-ovate, entire; ms. 3—5-dentate to 12 μ..... *ganophylli* (1001b)

3133.4321 Cols. dense, subvelvety; hyphae substraight; hc. oblong, entire; ms. cristate-dentate ..... *nephelii* var. *singalensis* (1002)

3133.3222 Cols. dense; hyphae straight to sinuous; hc. clavate; ms. dentate ..... *talisiana* (1003)

3132.4221 Cols. dense; hyphae substraight; hc. cylindric, entire; ms. 2—4-cristate-dentate to 10 μ .... *odontocephala* (1004)

3131.4223 Cols. dense; hyphae undulate to flexuous; hc. cylindric-clavate, angulose to lobate; ms. 2—6-dentate to 11 μ..... *sapindi* (1005)

3131.4221 Cols. thin; hyphae substraight to sinuous; hc. subglobose-ovate; ms. 2—5-cristate-dentate to 11 μ ..... *koelreuteriae* (1006)

3131.3222 Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-clavate, entire or subangulose; ms. dentate..... *pauliniae* var. *dentata* (1007)

31⅓1.4221 Cols. thin; hyphae substraight to undulate; hc. ovate-clavate, entire; ms. uncinate to arcuate, dentate ..... *trujillensis* (1008)

3133.4221 Cols. thin; hyphae crooked; hc. oblong to ellipsoid, entire; ms. obtuse or dentate..... *variaseta* (1009)

31⅓3.4222 Cols. thin; hyphae straight; hc. globose to ovate-piriform or subangulose; ms. acute or dentate to 6 μ ..... *pauliniicola* (1010)

31⅓3.3223 Cols. thin, velvety; hyphae straight; hc. ovate, rounded to attenuate at apex, entire; ms. acute or 2—3-dentate to 15 μ..... *nephelii* (1011)

31⅓3.3222 Cols. thin; hyphae crooked; hc. subglobose, entire; ms. acute or minutely dentate ..... *nepheliicola* (1012)

31⅓3.3222 Cols. subdense; hyphae substraight; hc. small, ovate-cylindric, entire; ms. acute or dentate *sapindi-esculenti* (1013)

31⅓3.3221 Cols. subdense; hyphae crooked; hc. small subglobose, ovate or lobate; ms. acute or dentate ..... *commixta* (1014)

31⅓2.4222 Cols. dense, velvety; hyphae straight; hc. ovate-oblong, entire; ms. acute or 2—3-dendate; sp. oblong ..... *capensis* (1015)

31⅓3.43×3 Cols. dense; hyphae straight; hc. cylindric, entire; ms. acute or dentate ..... *capensis* var. *domingensis* (1016)

31⅓2.4233	Cols. dense, velvety; hyphae straight; hc. globose-ovate, entire; ms. acute or dentate ..	*capensis* var. *thomasii*	(1018)
3112.4223	Cols. dense, subvelvety; hyphae straight; hc. subglobose to wide ovate; ms. acute or rarely dentate	*capensis* var. *mischocarpi*	(1019)
31⅓3.4222	Cols. dense; hyphae straight; hc. small, ovate-cylindric, entire; ms. obtuse or 2—3-dentate	*capensis* var. *allophylicola*	(1020)
3112.4222	Cols. dense, velvety; hyphae straight; hc. globose-oblong, entire; ms. acute	*capensis* var. *diploglottidis*	(1021)
31⅓2.4222	Cols. dense; hyphae straight; hc. subconoid, obtuse, entire; ms. simple and obtuse or mostly 2—3-dentate to 12 μ	*capensis* var. *blighiae*	(1022)
31⅓2.3222	Cols. dense; hyphae straight; hc. ovate, apex attenuate, small; ms. acute or dentate	*capensis* var. *cupaniae*	(1023)
3132.4223	Cols. dense, vevety; hyphae substraight to undulate; hc. oblong-clavate or sublobate; ms. 2—3-dentate, rarely simple and acute ...	*capensis* var. *hughesii*	(1024)
31⅓2.3223	Cols. dense; hyphae straight; hc. ovate, apex attenuate, small; ms. acute or dentate, sp. smaller, 31—35×13—15 μ	*capensis* var. *lecaniodisci*	(1025)
31⅓2.3223	as above; sp. 33—37×15—17 μ	*capensis* var. *malayensis*	(1026)
31⅓2.3222	as above; hc. more elongate	*capensis* var. *baileyana*	(1027)
31⅓2.5323	Cols. dense; hyphae straight; hc. cylindric to ovate or angulose; ms. acute or dentate ..	*capensis* var. *pancoviae*	(1028)
3112.3222	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate to conoid, entire; ms. acute, rarely 2-dentate	*capensis* var. *riparia*	(1029)
31⅓3.4223	Cols. thin to subdense; hyphae straight to undulate; hc. cylindric, entire; ms. acute or 2—3-dentate to 10 μ.....	*furcillata*	(1030)
31⅓1.4222	Cols. dense, velvety; hyphae substraight to crooked; hc. cylindric to subglobose or angulose; ms. acute, obtuse or 2-dentate	*deinbolliae*	(1031)
31⅓1.3222	Cols. thin to subdense, subvelvety; hyphae undulate to crooked; hc. clavate or angulose to sublobate; ms. acute or bifid to 30 μ	*allophyli*	(1032)
3113.5333	Cols. thin to subdense; hyphae straight or undulate; hc. cylindric, entire; ms. acute ...	*fraseri*	(1033)
3113.5332	Cols. thin; hyphae straight to crooked; hc. oblong to wide ovate, large; ms. acute	*guioae-semiglaucae*	(1034)
3113.4321	Cols. thin; hyphae straight; hc. ovate-cylindric, entire; ms. acute	*guioae*	(1035)

3113.4232 Cols. thin; hyphae substraight; hc. ovate-oblong; ms. obtuse ..... *cupaniae-majoris* (1036)

3113.4232 Cols. dense, subcrustose; hyphae crooked; hc. subglobose, entire; ms. obtuse ..... *lyoni* (1037)

3113.4232 Cols. on petioles, dense, velvety; hyphae substraight to crooked; hc. globose-ovate; ms. obtuse ..... *samarensis* (1038)

3113.4223 Cols. thin, velvety; hyphae substraight; hc. clavate to subangulose; ms. acute ..... *serjaniae* var. *major* (1039)

3113.4222 Cols. thin; hyphae substraight; hc. cylindric, entire; ms. acute ..... *fraseri* var. *minor* (1040)

3113.4222 Cols. dense, subvelvety; hyphae crooked; hc. small, ovate to oblong-clavate, entire; ms. obtuse ..... *alectryonis* (1041)

3113.4222 Cols. dense, crustose; hyphae straight; hc. globose to wide ovate, entire; ms. acute ..... *cardiospermi* (1042)

3113.4222 Cols. subdense, velvety; hyphae substraight; hc. cylindric, ovate or angulose; ms. acute ... *doidgeae* (1043)

3113.4222 Cols. dense; hyphae substraight; hc. subglobose-piriform, entire to sublobate; ms. acute ..... *acrotricha* (1044)

3113.3222 Cols. dense; hyphae straight to flexuous; hc. oblong, entire; ms. obtuse..... *paulliniana* (1045)

3113.3222 Cols. thin; hyphae substraight; hc. small, cylindric; ms. acute ..... *thouiniae* (1046)

3112.3224 Cols. subdense, subvelvety; hyphae straight to crooked; hc. conoid, rounded at apex; ms. acute ..... *capensis* var. *euphoriae* (1047)

3112.3221 Cols. dense; hyphae straight; hc. conoid, rounded at apex; ms. obtuse ..... *capensis* var. *mataybae* (1048)

3112.3222 as above; setae longer ..... *capensis* var. *mataybae* f. *longiaristata* (1049)

3111.4232 Cols. thin, subvelvety; hyphae undulate to crooked; hc. small, ovate-clavate, entire; ms. flexuous, subacute..... *integriseta* var. *allophyli* (1051)

3111.4223 Cols. very thin; hyphae substraight; hc. piriform to irregularly angulose; ms. obtuse *terecitensis* (1052)

3111.4223 Cols. thin; hyphae straight to undulate; hc. crenate-lobate; ms. acute ..... *serjaniae* (1053)

3111.4223 Cols. thin; hyphae substraight to flexuous; hc. large, subglobose to sublobate; ms. obtuse *tijucensis* (1054)

3111.4222 Cols. dense, velvety; hyphae substraight; hc. subglobose-oblong to sublobate; ms. obtuse .. *erioglossi* (1055)

3111.4222 Cols. subdense, subvelvety; hyphae straight; hc. subglobose-piriform, entire; ms. acute ... *parenchymatica* (1056)

3111.3223	Cols. thin to subdense; hyphae substraight; hc. irregularly angulose to sublobate; ms. obtuse	*equadorensis*	(1057)
3111.3223	Cols. thin; hc. ovate, entire; ms. obtuse	*colladoi*	(1058)
3111.3222	Cols. thin to dense; hyphae sinuous to crooked; hc. subglobose-oblong, angulose to lobate; ms. acute	*otophorae*	(1059)
3111.3221	Cols. dense, velvety; hyphae crooked; hc. angulose to lobate; ms. acute	*sydowiana*	(1060)
3111.3222	Cols. thin, subvelvety; hyphae substraight; hc. ovate-clavate or subangulose; ms. acute	*paullíniae*	(1061)
3111.3221	Cols. subdense, velvety; hyphae substraight to undulate; hc. subglobose-piriform; ms. obtuse	*integriseta*	(1062)
3111.3221	Cols. velvety, thin to subdense; hyphae substraight to undulate; hc. subglobose-ovate; ms. obtuse	*stevensii*	(1063)
3111.3221	Cols. dense, subvelvety; hyphae substraight; hc. small, ovate-cylindric, entire; ms. obtuse	*lepisanthea*	(1064)
3111.3221	Cols. thin; hyphae straight to undulate; hc. subglobose, entire; ms. obtuse	*lepisanthea* var. *schmideliae*	(1065)

Host Family 198. Sapindaceae.

(988) *Irenopsis wrightii* (B. & C.) Hansf., Sydowia **9**: 39. 1955.
= *Meliola wrightii* B. & C., Journ. Linn. Soc. London **10**: 392. 1869.
= *Irenina wrightii* (B. & C.) Stev., Ann. Mycol. Berlin **25**: 450. 1927.

Cols. hypophyllous, to 10 mm. diam., or confluent, rather thin, each on a brown, discoloured leafspot. Hyphae sinuous to crooked, cells mostly 20—35×6—8 μ, bracnhing opposite or irregular, loosely reticulate-interwoven. Ch. alternate or about 10% opposite, irregularly bent, antrorse or spreading, 20—35 μ long; stc. cylindric to irregular, straight or bent, rounded-angulose to shallowly lobate, 10—22× 8—13 μ. Mh. not seen. P. loosely scattered, verrucose, to 180 μ diam.; ps. 0—15, erect-spreading, to 180×7—9 μ, continuous or 1-septate, simple, obtuse, more or less bent to tortuous at the paler apex, the upper part finely and closely granulose to verruculose. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 39—46×17—19 μ.

On *Sapindaceae* indet., Cuba, Wright 881, type (K).

(989) *Irenopsis araneosa* (Syd.) Stev., Ann. Mycol. **25**: 434. 1927.
= *Meliola araneosa* Syd., Leafl. Philipp. Bot. **6**: 1922. 1913.

Cols. epiphyllous, to 7 mm. diam. or confluent, thin. Hyphae substraight to undulate, cells mostly 20—30×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading or slightly antrorse, usually straight, 11—13 μ long; stc. cylindric, 2—4 μ long; hc. globose to wide ovate, entire, 8—11×8—10 μ. Mh.

mixed with ch., alternate or opposite, ampulliform, 18—22 μ long. P. scattered, to 150 μ diam.; ps. few, erect-spreading, simple, obtuse, straight, or sharply bent at apex, smooth, 2—3-septate, up to 100× 8—9 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 35—38×13—16×11—13 μ.

On *Guioa microcarpa*. Philippines, PBS 13553, type. (S).

(900) *Irenopsis cupaniae* Stev., Ann. Mycol. **25**: 434. 1927.

= *Meliola cupaniae* Stev., Illinois Biol. Monogr. **2**: 29. 1916.

Cols. epiphyllous, very thin, to 10 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 20—35×5—7 μ, branching opposite at wide angles, loosely interwoven-reticulate. Ch. alternate, spreading, straight or slightly bent, 18—25 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. ovate to cylindric, entire, straight or bent, widely rounded at apex, 14—20×7—9 μ. Mh. mixed with ch., alternate or less commonly opposite, ampulliform, 15—23×6—8 μ. P. scattered, verrucose, to 170 μ diam.; ps. 4—12, erect-spreading, straight or irregularly bent to subuncinate above, obtuse, 2—3-septate, dark brown, to 140×6 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 33—37×13—15 μ.

On *Cupania americana*, Porto Rico, Stevens 9143 (type), 8948, 8080, 9489, 4979, 9318; — On *C. triquetra*, Porto Rico, Whetzel 2784 (CUP).

(991) *Irenopsis cupaniicola* Hansf., Sydowia **9**: 37. 1955.

Cols. epiphyllous, to 2 mm. diam., very thin, smooth. Hyphae substraight to undulate, cells mostly 25—35×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, usually irregularly bent, spreading or antrorse, sometimes retrorse, 22—35 μ long; stc. cylindric, cuneate or irregular, often bent, 7—15 μ long; hc. versiform, usually much bent, from ellipsoid and entire, to rounded-angulose, or irregularly lobate, 15—25×10—18 μ. Mh. few, mixed with ch., alternate or rarely opposite, ampulliform, 16—20×6—8 μ. P. loosely scattered, verrucose, to 200 μ diam.; ps. 0—8, spreading-erect, to 130×6—7 μ, nearly straight, or usually with bent to uncinate, obtuse apex, 2—3-septate, smooth, dark brown. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 34—44×15—17 μ.

On *Cupania guatemalensis*, Costa Rica, Sydow, Fung. exot. exs. 625, type (mixed with *Asteridiella guatemalensis*); — On *C. vernosa*, Brazil, Theissen, Decad. Fung. brasil. 21, p. p. (S); — On *C. emarginata*, Brazil, Theissen, Decad. fung. brasil. 26 (S); — On *C. vernalis*, Argentina, SPEG 1832 p. p.

(992) *Asteridiella dodonaeae* Hansf., Sydowia **10**: 47. 1957.

= *Irenina dodonaeae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 78. 1953.

Cols. amphigenous, to 1 mm. diam., dense, rarely confluent. Hyphae substraight, cells mostly 15—20×7—8 μ, branching opposite

at wide angles, densely reticulate and almost solid. Ch. opposite or alternate, more or less antrorse, straight or slightly bent, 16—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. subglobose to piriform, entire, 12—16×9—13 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 14—20×7—9 μ. P. in central group, slightly verrucose, to 240 μ diam., surface cells rounded to conoid, scarcely projecting. Sp. oblong, obtuse, 4-septate, constricted, 40—46×16—18 μ.

On *Dodonaea triquetra*, New South Wales, Fraser, type.

(993) *Asteridiella guatemalensis* Hansf., Sydowia **10**: 48. 1957.
= *Irene guatemalensis* Hansf., Sydowia **9**: 33. 1955.

Cols. epiphyllous, dense, to 2 mm. diam., smooth. Hyphae straight, cells mostly 12—20×7—9 μ, branching opposite at about 45°, closely and regularly reticulate. Ch. about 90% opposite, somewhat antrorse, almost straight, 14—18 μ long; stc. cylindric or cuneate, 2—4 μ long; hc. cylindric with broadly rounded apex, entire, 10—14×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. in central group, or scattered, very rough, to 210 μ diam., surface cells conoid, or produced into cylindric-conoid processes to 30 μ high. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 34—40×17—19×12—15 μ.

On *Cupania glabra*, Jamaica, Dennis J-109 (K), type; — On *C. guatemalensis*, Costa Rica, Sydow, Fung. exot. exs. 625; — On *C. emarginata*, Brazil, Theissen, Decad. fung. brasil. 26 p. p.; — On *C. americana*, Venezuela, Kern & Toro 1771 (CUP); Trinidad, Thaxter 7547 (F); — On *C.* sp., Brazil, Ule, Herb. brasil 534 p. p.; Venezuela, — Chardon & Toro 632 (CUP).

(994) *Asteridiella tersa* (Cif.) Hansf., Sydowia **10**: 50. 1957.
= *Meliola (Irenina) tersa*, Cif., Ann. Mycol. Berlin **36**: 223. 1938.

Cols. epiphyllous, thin to subdense, to 3 mm. diam. Hyphae substraight, cells mostly 20—30 μ long, 6—8 μ thick, branching opposite at wide angles, loosely reticulate. Ch. opposite, spreading-antrorsel usually straight, 15—18 μ long; stc. cylindric, 3—4 μ long; hc. cylind, ric with rounded to subacuminate apex, 11—14×7—10 μ. Mh. few-mixed with ch., opposite or alternate, ampulliform, 19—22×5—8 μ, P. scattered, verrucose, to 260 μ diam., surface cells conoid to cylindric, obtuse, to 20 μ high. Sp. ellipsoid to ovoid, obtuse, 4-septate, slightly constricted, 37—46×18—21 μ, the middle cell often the largest.

On *Cupania americana*, San Domingo, Ciferri, type.

(995) *Asteridiella bomplandii* (Speg.) Hansf., Sydowia **10**: 47. 1957.
= *Meliola bomplandii* Speg., Anal. Mus. Nac. Buenos Aires 23: 39. 1912.
= *Irenina bomplandii* (Speg.) Stev., Ann. Mycol. 25: 450. 1927.

Cols. epiphyllous, to 5 mm. diam., thin, easily secedent. Hyphae straight, branching opposite, acute to wide, loosely to rather closely

reticulate. Ch. opposite or alternate in varying proportions, somewhat antrorse, usually straight, 13—18 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate to cylindric, entire, 9—15×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—8 μ. (Spegazzini: Ms. none. P. scattered, to 180 μ diam., rough. Sp. ellipsoid with slightly attenuate-rounded ends, 28×18 μ, 4-septate, slightly constricted).

On *Sapindus saponaria*, Argentina, SPEG 516, type; Panama, Stevens 932 p. p.; — On *Sapindaceae* indet., Panama, Stevens 527, 859, 506.

Note. Little now remains of the type specimen, save traces of mycelium. In Stevens' specimens cited above the spores are 33—39× 15—17 μ, subellipsoid; it is possible that Spegazzini's measurements may have been a mis-print for 38×18 μ, but none were found in my mount to check on this point.

(996) *Asteridiella hypelates* Hansf., Sydowia Beih. **1**: 96. 1957.

Cols. amphigenous, to 1 mm. diam., very dense, smooth. Hyphae substraight to undulate or crooked, branching opposite or irregular, at acute to wipe angles, densely reticulate and almost solid, cells mostly 10—18×7—8 μ. Ch. alternate or very rarely (less than 1%) opposite, subantrorse or spreading, straight or bent, 18—25 μ long; stc. cuneate, 4—9 μ long; hc. oblong to piriform, entire or crenulate, sometimes sublobate, 13—18×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—26×7—9 μ. P. subaggregate in centre, verrucose, to 230 μ diam., surface cells rounded to obtuse conoid, to 15 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—46× 18—20 μ.

On *Hypelate trifoliata*, Cuba, Wright 2171; Porto Rico, Britton 1768-a; Bahamas, Wilson 8246 (FLS).

(997) *Asteridiella chardoniana* Hansf., Sydowia **10**: 52. 1957.

Cols. epiphyllous, mixed with *Meliola trujillensis*, dense, smooth, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 20—30× 7—8 μ, branching opposite or irregular, acute to wide, closely reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 19—31 μ long; stc. cuneate, 5—10 μ long; hc. clavate, irregularly angulose to shallowly lobate, 14—23×11—19 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23×7—8 μ. P. in loose central group, verrucose, to 270 μ diam., surface cells rounded to obtuse conoid, to 25 μ high by about 40 μ diam. at the base. Sp. ellipsoid, obtuse, 4-septate, constricted, 36—42×18—20 μ.

On *Serjania* sp., Venezuela, Chardon 925 p. p., type (CUP).

(998) *Asteridiella cupaniae* (Toro) Hansf., Sydowia **10**: 47. 1957.
= *Irene cupaniae* Toro in herb. (? ined.).

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 25—30×6—7 μ, branching

opposite, acute, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 20—27 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. cylindric to clavate, entire, 14—18×9—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—22×7—8 μ. P. scattered, verrucose, to 180 μ diam., surface cells rounded to obtusely conoid, to 20 μ high. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 35—39×15—17 μ.

On *Cupania americana*, Porto Rico, Toro in CUP 14128, type.

(999) *Meliola sapindacearum* Speg., Rev. Argent. Hist. Nat., 1: 29. 1891.

= *Meliola serjaniicola* Stev. & Tehon, Mycologia 18: 14. 1926.

= *Meliola phaeocephala* Cif., Mycopath. 7: 172. 1954.

Cols. epiphyllous, to 2 mm. diam., dense, subvelvety. Hyphae substraight to slightly undulate, branching opposite, acute, densely reticulate, cells mostly 20—35×7—9 μ. Ch. opposite or alternate in varying proportions, spreading or antrorse, straight or bent, 14—22 μ long; stc. cylindric, 2—7 μ long; h.. usually with 3 shallow, rounded lobes, or merely angulose, 10—15×10—16 μ. Mh. rather few, mixed with ch., opposite or alternate, conoid to ampulliform, 15—22×7—9 μ. Ms. fairly numerous, scattered and with shorter ones grouped around P., straight, rarely simple and acute, usually 2—3-dentate to 12 μ, or with 2—3 branches to 10 μ long, each 2-dentate to 5 μ, up to 280×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 36—43×15—17 μ.

On *Sapindaceae* indet., Paraguay, Balansa 3600 (= SPEG 559, type); — On *Serjania paucidentata*, British Guiana, Stevens 798, type of *M. serjaniicola* (FLS); — On *S. diversifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 219-bis; — On *S. polyphylla*, San Domingo, Ciferri, Mycofl. doming. exs. 220; — On *S. sinuata*, San Domingo, Ekman 3021 (type of *M. phaeocephala*), 3130; — On *S.* sp., San Domingo, Ekman 15409 (S); Trinidad, Thaxter 7498 (F).

(1000) *Meliola crucifera* Starb., Arkiv. Bot. 5: 7. 1905.

= *Meliola hessii* Stev., Illinois Biol. Monogr. 2: 59. 1916.

= *Meliola serjaniicola* Batista & Vital, Anal. IV Congr. Soc. Bot. Brazil, p. 110. 1953, non Stev. & Tehon, 1926.

Cols. epiphyllous, dense to 4 mm. diam. or confluent, subvelvety. Hyphae substraight to slightly undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. opposite, or to 30% alternate, crowded, spreading, straight or bent, 14—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. piriform, oblong or ovate, often bent, entire, 10—15×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—20×7—10 μ. Ms. numerous, scattered, straight, to 290×8—10 μ, apex 1—2-dichotomous, the branches spreading-reflexed, to 20 μ long, each usually 2-dentate to

5 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 38—50×15—20×13—15 μ.

On *Melicocca bijuga*, San Domingo, Ciferri, Mycofl. doming. exs. 63; Venezuela, Muller 2009, Chardon 755 (CUP); Jamaica, Thaxter 7239 (F); — On *M. lepidopetala*, Paraguay, Malme 368 (S); SPEG 573, 574; Bertoni 499, 1080, 1081, Anisitz 264 (SPEG); — On *M.* sp., Venezuela, Sydow, Fung. venez. 794; — On *Paulinia pinnata*, Venezuela, Sydow, Fung. venez. 439, with sp. 34—41× 14—16 μ; Porto Rico, Stevens 1207, 9367; (type of *M. hessii*); Jamaica, Thaxter 7253 (F); — On *Sapindus saponaria*, Venezuela, Soltero 1567 (CUP); Panama, Stevens 932 p. p. (FLS).

(1001) *Meliola campylopoda* Syd., Ann. Mycol. 24: 298. 1926.

Cols. hypophyllous, to 8 mm. diam., subvelvety, subdense. Hyphae undulate to sinuous, cells mostly 15—25×6—8 μ, branching opposite or irregular at wide angles, loosely to densely reticulate. Ch. alternate or opposite, straight or bent, antrorse or spreading, 14—18 μ long; stc. cylindric, 2—4 μ long; hc. from subconoid to oblong, entire, straight or bent, 10—15×7—10 μ. Mh. not seen. Ms. numerous, closely scattered, straight, to 350×9—10 μ, apex irregularly 2—6-furcate to 24 μ, or dentate, the branches usually 2-dentate to 7 μ. P. scattered, verrucose, to 300 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—40×18—20 μ.

On *Billia columbiana*, Costa Rica, Sydow, Fung. exot. exs. 617, Brenes, Fung. costaric. 326 (F); — On *Cupania* sp., Brazil, Ule, Herb. brasil. 534 p. p., with ms. only 2—3-dentate; — On *Cupania vernalis*, Argentina, SPEG 1832; — On *C. americana*, Trinidad, Thaxter 7546 (F).

(1001-a) *Meliola lychnodisci* Deighton, Sydowia 11: 109. 1957.

Cols. hypophyllous, dense, velvety, to 10 mm. diam. Hyphae very sinuous, branching opposite or alternate at wide angles, densely reticulate, cells mostly 20—40×3—8 μ. Ch. alternate or to 30% opposite, straight or bent, often versiform, 11—24 μ long; stc. cuneate to cylindric, 2—10 μ long; hc. versiform, elliptic, oblong, corniform or malleiform, entire or with sinuous margin, 9—16×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×5—7 μ. Ms. scattered and grouped around P., straight, to 260×7—8 μ, rarely simple and acute, usually 2—3-furcate to 42 μ with straight, divergent branches sometimes 2-dentate. P. scattered, verrucose, to 150 μ diam. Sp. fusoidellipsoid, obtuse, 4-septate, constricted, 36—46×14—15×12—14 μ. the central cell largest.

On *Lychnodiscus dananensis*, Sierra Leone, Deighton 5042-b (IMI 51792, type), 5065-a.

The ch. are often formed towards the middle of the parent cell, and the opposite members of a pair may be distributed along the length of the parent cell.

(1001-b) *Meliola ganophylli* Stev. & Rold., Philipp. Journ. Sci. **56**: 56. 1935.

= *Meliola micromeli* Stev. & Rold., l. c. **56**: 57. 1935.

= *Meliola benguetensis* Stev. & Rold., l. c. **56**: 58. 1935.

= *Meliola pistaciae* Stev. & Rold., l. c., **56**: 59. 1935.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., dense and subcrustose. less commonly on petioles and twigs. Hyphae substraight to undulate or crooked, often in parallel strands, branching opposite or alternate, acute, densely reticulateradiating and almost solid, cells mostly 10—15×6—8 μ. Ch. opposite or alternate in varying proportions, antrorse or spreading, straight or slightly bent, 14—19 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. globose to widely ovate entire 9—13×8—12 μ. Mh. separate opposite or ternate ampulliform 14—20×7—9 μ. Ms. numerous in centre of colony straight to 290×8—10 μ apex 3—5-dentate to 12 μ rarely forked to 20 μ with br. dentate. P. in central group, or loosely scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—53×18—21×16—18 μ.

The colonies are peculiar in possessing an outer zone of more or less parallel hyphae forming a solid plate, and here almost devoid of hyphopodia and setae.

On *Ganophyllum obliquum*, Philippines, Stevens 1671. type (FLS, CUP, USDA).

I am indebted to Dr. S. Blake of United States Dept. of Agric., for the determination of the host of Stevens 1671, which Stevens gave originally as *Ganophyllum falcatum*. Dr. Blake has also examined Stevens 1712 and 1726, to find that in his opinion they represent the same host plant, not determinable from the very limited material available, but belonging to neither *Pistacia* nor *Micromelum* as originally given by Stevens. Similarly Stevens 1670 is not on "*Otophora* sp.", though the host is not determinable.

Detailed comparison of the *Meliola* colonies present on these specimens leaves the present author in no doubt that they represent only a single species, and possibly only a single host plant; Stevens 1670, type of *Meliola benguetensis*; Stevens 1712. type of *M. pistaciae*; Stevens 1726, type of *M. micromeli*.

(1002) *Meliola nephelii* Sacc. var. *singalensis* Hansf., Sydowia 10: 80. 1957.

Cols. epiphyllous, to 2 mm. diam., or numerous and confluent, subvelvety. Hyphae substraight, branching opposite at wide angles. densely reticulate, cells 12—18×7—8 μ. Ch. alternate or to 10% opposite, straight, subantrorse, 15—23 μ long; stc. cylindric. 3—6 μ long; hc. oblong, entire, 11—18×9—11 μ. Mh. mixed with ch., opposite or alternate, conoid to amulliform, 15—20×7—9 μ. Ms. scattered, straight, to 290×8—9 μ, apex cristate-dentate to 6 μ. P. scattered,

verrucose, to 150 μ diam., surrounded at base by radiating exhyphopodiate hyphae. Sp. ellipsoid, btuse, 4-septate, constricted, 37—47× 16—21 μ.

On *Allophylus* sp., Ceylon, Herb. Peradeniya 5187, type.

(1003) *Meliola talisiana* Batista & Maia, Univ. do Recife, Inst. de Micol., Publ. **25**: 9. 1956.

Cols. epiphyllous or rarely amphigenous, to 2 mm. diam. or confluent, easily secedent, dense. Hyphae straight or sinuous, branching opposite at wide angles, loosely to closely reticulate, cells mostly 17—22×6—8 μ. Ch. alternate or less frequently opposite, spreading or subantrorse, straight, 13—16 μ long; stc. cylindric, 1—3 μ long; hc. clavate, entire, 11—13×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—8 μ. Ms. grouped around P., straight, to 380×6—8 μ, apex acute or 2—5-dentate to 5 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×11—13×8—11 μ.

On *Talisia esculenta*, Brazil, IMUR 5436, type.

(1004) *Meliola odontocephala* Syd., Leafl. Philipp. Bot. **9**: 3119. 1925.

Cols. epiphyllous, dense, to 4 mm. diam., velvety. Hyphae substraight, cells mostly 15—25×6 μ, branching opposite at wide angles, very closely reticulate. Ch. opposite save where too crowded, spreading or antrorse, straight or bent, 13—18 μ long; stc. cylindric, 2—6 μ long; hc. cylindric with rounded apex, straight or bent, 10—14× 6—8 μ, entire. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—9 μ. Ms. numerous, straight, to 250×7—9 μ, apex cristate with 2—4 teeth to 10 μ long. P. scattered, verrucose, to 130 μ diam. (immature). Sp. oblong, obtuse, 4-septate, constricted, 40—48×15—18×14—15 μ.

On *Harpullia arborea*, Philippines, Elmer 17012, type.

(1005) *Meliola sapindi* Stev., Ann. Mycol. **26**: 199. 1928.

Cols. amphigenous, mostly hypophyllous, dense, on lower surface elongate along veins. Hyphae undulate to flexuous, branching opposite or irregular, acute, closely reticulate-interwoven, cells mostly 20—30× 6—9 μ. Ch. alternate, antrorse to reflexed, usually bent, often sharply, 20—32 μ long; stc. cylindric, 4—10 μ long; hc. irregularly angulose to sublobate, often bent, 15—23×11—16 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×7—9 μ. Ms. numerous, scattered and grouped around P., to 450×9—11 μ, apex 2—6-dentate to 11 μ. P. scattered, globose, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—49×17—19×15 μ.

On *Sapindus saponaria*, Panama, Stevens 932 p. p., type.

(1006) *Meliola koelreuteriae* Hansf., Farlowia **3**: 276. 1948.

Cols. amphigenous, mostly epiphyllous, also caulicolous, thin, to 3 mm. diam. or confluent. Hyphae substraight to sinuous, cells

mostly 20—25×6—7 μ, branching opposite at wide angles, loosely reticulare. Ch. spreading, usually straight, 11—18 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to ovate, entire, 7—13×7—11 μ. Mh. rather numerous, mixed with ch., opposite or alternate, ampulliform, 18—22×6—8 μ, neck elongate. Ms. scattered, straight, to 260×7—8 μ, apex 2—5-cristate-dentate to 11 μ, or sometimes shortly 2-furcate to 10 μ and the branches dentate. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, btuse, 4-septate, slightly constricted, 35—42×14—17 μ.

On *Koelreuteria* sp., China, Cheo 2522, type (F).

(1007) *Meliola paulliniae* Stev. var. *dentata* Stev., Ann. Mycol. **26**: 197. 1928.

= *Meliola serjaniae* Stev. var. *dentata* Stev., l. c., **26**: 280. 1928.

? = *Meliola acrotricha* Syd. var. *diversiseta* Cif., Mycopath. **7**: 90. 1954.

Cols. epiphyllous, to 3 mm. diam. or confluent, thin to subdense, sometimes velvety. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely to closely reticulate, cells site or irregular at wide angles, loosely to closely reticulate, cells mostly 15—30×7—9 μ. Ch. alternate, spreading or subantrorse, straight or bent, 17—25 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. subglobose, ovate or oblong, entire or angulose, rarely sublobate, 12—17×11—18 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—9 μ. Ms. few to numerous, scattered and grouped around P., to 800×9—10 μ (much shorter around P.), apex rarely simple and subacute, usually 2—4-dentate to 10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×15—17 μ.

On *Serjania triquetra*, Panama, Stevens 1243 (type); — On *S. atrolineata*, Venezuela, Chardon & Toro 706 (CUP); — On S. sp., Venezuela, Chardon & Toro 458, 442, 436 (CUP); Panama, Stevens 724; Costa Rica, Stevens 703; — On *Paullinia* spp., Panama, Stevens 97, 148, 168, 346, 852, 878, 894, 953, 1080, 1224; — On *Sapindaceae* indet., Costa Rica, Stevens 593.

I have not seen authentic specimens of the Ciferri variety quoted above (Ekman 3134 and 3292, on *Serjania polyphylla*, San Domingo), but both description and drawings suggest synonomy. Comparison of the Stevens' collections quoted indicate that the two forms were originally separated mainly on the basis of the shape of the hc., being more regular in the variety of *M. paulliniae*, and angulose to sublobate in that of *M. serjaniae*. This difference is not constant, and both forms may be found even in the same colony, and inter-grade one to the other. The setal dentation is irregular in some collections, with teeth formed some distance below the apex, while in others all teeth are together at the tip.

(1008) *Meliola trujillensis* Toro in Chardon & Toro, Monogr. Univ. Porto Rico, B: 2: 125. 1934.

Cols. mostly epiphyllous, to 2 mm. diam., rather thin. Hyphae substraight to undulate, cells mostly 20—30×6—7 μ, branching opposite, at wide angles, loosely reticulate. Ch. alternate, antrorse or spreading, usually slightly bent, 13—18 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate to cylindric-clyvulate, entire, 10—14×7—9 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 14—17×7—8 μ. Ms. scattered thinly and grouped around P., to 280×7—8 μ, the upper part flexuous, arcuate to uncinate, apex rarely simple and acute, usually 2—3-dentate to 12 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—42×14—16 μ.

On *Serjania* sp., Venezuela, Chardon 925, type (CUP).

(1009) *Meliola variaseta* Stev., Ann. Mycol. 26: 204. 1928.

Cols. hypophyllous, thin to subdense, to 40 mm. diam. Hyphae crooked, branching alternate or irregular, acute, loosely to closely reticulate, cells mostly 15—25×4.5—5.5 μ. Ch. opposite or alternate in varying proportions, spreading or recurved, usually bent, 9—16 μ long, often formed behind the apex of the parent cell; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose, ovate or oblong, entire, often bent, 7—11×5—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×6—7 μ, neck elongate. Ms. mostly grouped around P., straight, to 230×7—8 μ, apex irregularly dentate to 10 μ, or with 2 short, dentate branches. P. scattered, slightly verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 37—44×15—18×13 μ, the central cell usually distinctly the largest.

On *Sapindaceae* indet., Panama, Stevens 1299, type (FLS); — On *Cupania americana*, Trinidad, Thaxter 7465 p. p. (F); — On *C. seemannii*, Panama, Standley 31423 (F).

(1010) *Meliola paulliniicola* Hansf., Sydowia 9: 46. 1955.

Cols. epiphyllous, thin, to 2 mm. diam., causing a slight brown leafspot. Hyphae straight, cells mostly 25—35×7—8 μ, branching opposite, acute, loosely radiating-reticulate. Ch. mostly opposite, antrorse, straight or bent, 16—24 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. from subglobose to ovate or piriform, entire, or rarely rounded-angulose, 12—19×9—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—25×7—8 μ. Ms. rather few, mostly grouped around P., straight, simple and acute, or 2—6-dentate to 6 μ, up to 400×8—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 37—44×15—18 μ.

On *Paullinia* sp., Brazil, Ule, Herb. brasil. 2272, type (S).

(1011) *Meliola nephelii* Sacc., Bull. Orto Bot. Napoli 6: 42. 1921.

Cols. epiphyllous, to 2 mm. diam. or confluent, thin, subvelvety.

Hyphae straight, cells mostly 10—15 μ long, 5—7 μ thick, branching close, opposite, at wide angles, closely reticulate. Ch. regularly alternate (less than 1% opposite), subantrorse, straight or slightly reflexed-bent, 12—16 μ long; stc. cylindric, 2—4 μ long; hc. ovate, entire, rounded to somewhat pointed at apex, straight or slightly bent, 8—13×5—8 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, straight, to 900×7—9 μ, apex simple and acute, or 2—3-dentate to 15 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—34× 12—14 μ.

On *Nephelium cappaceum*, Singapore, Baker, Fung. malay 454, type; — ? On *Allophylus glabra*, Nicobar Is., Currey Herb. 3813 (K), has hc. subglobose to ovate, and only immature setae.

In the type collection, this species occurs mixed with a form of *M. capensis*, with opposite ch.; both were confused in the original description.

(1012) *Meliola nepheliicola* Stev. & Rold., Philipp. Journ. Sci. 56: 60. 1935.

Cols. hypophyllous, to 10 mm. diam., thin. Hyphae crooked, cells mostly 15—25×5—6 μ, branching opposite or irregular at wide angles, loosely interwoven-reticulate. Ch. alternate or opposite in varying proportions, straight or flexuous, 9—30 μ; stc. cylindric, 3—24 μ long, often bent; hc. subglobose to ovate, entire or angulose, versiform, 6—10×6—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×6—7 μ. Ms. scattered and grouped around P., straight, simple and acute or 2—3-dentate to 8 μ, to 470×8—10 μ. P. scattered, slightly verrucose, to 190 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 34—39×13—15×9—10 μ.

On *Nephelium intermedium*, Philippines, Stevens 77, type (FLS, CUP).

(1013) *Meliola sapindi-esculenti* Hansf., Sydowia 9: 47. 1955.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam. or widely confluent, rather dense. Hyphae substraight to undulate, cells mostly 12—20×6—7 μ, branching usually opposite, at wide angles, closely reticulate. Ch. alternate or 5—50% opposite, straight or slightly bent, spreading to antrorse, 11—15 μ long; stc. cylindric, 2—4 μ long; hc. cylindric to ovate, rounded at apex, entire, 8—12×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18× 6—8 μ. Ms. thinly scattered and grouped around P., straight, simple and acute, or 2-dentate to 7 μ, to 320×7—8 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 28—35×11—14 μ.

On *Sapindus esculentus*, Brazil, Baker, Plants of Amazon 380, type (S); IMUR 299, 1103.

(1014) *Meliola commixta* Syd., Leafl. Philipp. Bot. 9: 3117. 1925.

Cols. hypophyllous, 2—4 mm. diam., rather dense. Hyphae undulate to crooked, cells mostly 10—20×5—7 μ, branching close, usually opposite at wide angles, closely reticulate. Ch. opposite or alternaet, more or less bent, to crooked, 10—28 μ long; stc. cylindric, bent to tortuous, sometimes 1-septate, 3—20 μ long; hc. from subglobose or ovate and entire, to variously lobed and contorted, 7—11×6—9 μ. Mh. few, xedmi with ch., ampulliform, opposite or alternate, 14—19×6—8 μ. Ms. rather few, thinly scattered, straight, simple and acute, or 2—3-dentate to 4 μ, up to 250×7—9 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—39×13—15 μ.

On *Nephelium mutabile*, Philippines, PBS 15686, type.

(1015) *Meliola capensis* (K. & C.) Theiss., Ann. Mycol. 10: 19. 1912.
= *Asterina capensis* Kalchbr. & Cooke, Grevillea 9: 32. 1880.

Cols. amphigenous, velvety, dense, to 5 mm. diam., or confluent. Hyphae straight, cells mostly 10—15×6—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, spreading or slightly antrorse, usually straight, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. oblong to ovate, entire, rounded at apex, 8—11×7—9 μ. Mh. scattered, mixed with ch., opposite or unilateral, ampulliform, 14—18×6—8 μ. Ms. numerous, scattered and grouped around P., straight, to 400×6—8 μ, apex simple and acute, or 2—3-dentate to 7 μ (rarely to 25 μ). P. loosely aggregate, verrucose, to 200 μ diam., surface cells convex to obtusely conoid. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 33—40×13—16 μ.

On *Hippobromus alatus*, South Africa, PRET 9519, 10354, 1402, 2499, 6805, 6953, 8391, 8849, 9034, 10882, 10969, 11355, 11888, 12342, 12378, 14700, 15525; — On *Alectryon excelsum*, New Zealand, Colenso b—379 (K); — On *Schleicheria trijuga*, Java, BO 15251, 12213.

Note on Varieties of *M. capensis*.

A considerable number of these has recently been described by the present author and other workers; in general they fall into two groups:

(a) those with cylindric-clavate head cells

(b) those with hc. more or less conoid.

Other minor differences between these varieties are in density of colony; distribution of mycelial setae; details in size, shape and distribution of ch. and mh.; dentation of ms.; size and shape of spores. In general each variety is limited in occurence to a single species or genus of hosts, and it is possible that future research may indicate that to some extent these differences between varieties are resultants of the configuration of the host surface; it may also prove possible to cross-inoculate from one host to another, and to obtain these differences from sister spores. However, in our present state of knowledge, it seems best to describe these forms as separate varieties, as

all are distinct from the South African type of the species; were they all to be included within the description of a composite species, this would also embrace several other species, which at present are regarded as distinct.

(1016) *Meliola capensis* (K. & C.) Theiss. var. **domingensis** Hansf., var. n.

Plagulae epiphyllae, densae, usque ad 2 mm. diam. Hyphae brunneae, rectae, opposite acuteque ramosae, dense reticulatae et subsolidae, cellulis plerumque 12—20×7—8 μ. Hyphopodia capitata opposita vel usque ad 20% alternata, dense stipata, antrorsa, recta, cylindracea, 15—28 μ longa; cellula basali cylindracea, 3—8 μ longa; cellula apicali cylindracea apice rotundata, integra, 12—23×7—10 μ. Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, ampullacea, 15—25×7—8 μ. Setae myceliales tenuiter dispersae, rectae, simplices, actuae, vel interdum 2-dentatae usque ad 10—600×8—10 μ. Perithecia dispersa, atra, globosa, verrucosa, immatura. Sporae atrobrunneae, late ellipsoideae, obtusae, 4-septatae, constrictae, 42—49×19—22 μ.

Hab. in foliis *Allophyli crassinervis*, San Domingo, Ciferri 2836, typus, 2859. (in Herb. Stockholm.); Porto Rico, Stevens 9003 (FLS).

(1018) *Meliola capensis* (K. & C.) Theiss. var. *thomasii* (Hansf.) Hansf. & Deight., Mycol. Pyper, IMI **23**: 45. 1948.

= *Meliola thomasii* Hansf., Journ. Linn. Soc. London **51**: 283. 1937.

Cols. mostly epiphyllous, dense, velvety, to 2 mm. diam. Hyphae straight, cells mostly 17—25×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite save where crowded, straight or slightly bent, subantrorse, 14—18 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. widely ovate to oblong, entire, widely rounded at apex, straight, 8—12×8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered, to 600×9—12 μ, apex rarely simple and acute, usually 2—4-dentate to 15 μ. P. scattered, verrucose, to 230 μ diam. Sp. wide ellipsoid, obtuse, 4-septate, slightly constricted, 37—42×17—19 μ.

On *Phialodiscus* sp., Uganda, Hansford 1937 (type), 2030, 2050, 2089, 2433, 2441, 2482, 2782, 3268, 3330; — On *P. unijugatus*, Sierra Leone, Deighton 361, 1590, 2009; Gold Coast, Deighton CB 928, 929, 930, Hughes in IMI 37590.

In some colonies of the Uganda collections the hc. tend to be rather more pointed than in the type.

(1019) *Meliola capensis* (K. & C.) Theiss. var. *mischocarpi* Hansf., Reinwardtia **3**: 105. 1954.

Cols. amphigenous, to 5 mm. diam. or confluent, rather dense, thinly velvety. Hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite at wide angles, closely radiating-reticulate. Ch.

opposite save where crowded, subantrorse, usually straight or slightly bent, 13—16 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to wide ovate, apex obtusely rounded, entire, 9—13×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—9 μ. Ms. scattered, erect, simple, acute, to 900×8—9 μ, those around P. much shorter, and rarely 2—3-dentate to 3 μ. P. scattered, each on a radiate subiculum, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 42—47×18—20 μ, the middle cell sometimes slightly the largest.

On *Mischocarpus sundaicus*, Java, BO 13017 (type), 13003, 805, 806.

(1020) *Meliola capensis* (K. & C.) Theiss. var. *allophylicola* Hansf. & Deight., Mycol. Paper, IMI, **23**: 45. 1948.

Cols. amphigenous, thin to subdense, to 3 mm. diam., on lower surface slightly larger and thinner, more velvety. Hyphae straight or on lower surface flexuous to sinuous, cells mostly 12—28×5—8 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. opposite or alternate (on upper surface about 90% opposite, on lower surface about 50%), straight or slightly bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, wide ovate or oblong, broadly rounded at apex, entire, 7—11×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—9 μ. Ms. few to numerous, scattered and grouped around P., more or less straight, up to 400×7—9 μ, rarely simple and obtuse, usually 2—3-dentate to 10 μ, or very shortly 2-furcate to 8 μ with branches dentate; shorter around P., and in epiphyllous colonies, to 320 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—42×13—16 μ.

On *Allophylus africana*, Gold Coast, Deighton CB 866, type; Sierra Leone, Deighton 493, 1204, 1205, 1570, 1663, 1745, 2339.

(1021) *Meliola capensis* (K. & C.) Theiss. var. *diploglottidis* Hansf., Proc. Linn. Soc. N. S. W. **78**: 76. 1953.

Cols. mostly hyphophyllous, subdense, velvety, to 8 mm. diam., sometimes confluent; smaller on upper surface. Hyphae straight, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely to closely reticulate; on lower surface the hyphae undulate to sinuous, with longer cells. Ch. opposite save where crowded, more or less antrorse, straight or slightly bent, 13—21 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. globose to oblong-clavulate, entire, widely rounded at apex, 9—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×6—8 μ. Ms. scattered and grouped around P., more or less straight, simple, acute, to 400×7—8 μ, gradually attenuate upwards. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 35—43×16—18 μ.

On *Diploglottis australis*, New South Wales, Fraser 164, 137.

(1022) *Meliola capensis* (K. & C.) Theiss. var. *blighiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 45. 1948.

Cols. epiphyllous, to 2 mm. diam., subdense. Hyphae substraight, cells mostly 15—20×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, subantrorse or spreading, usually straight, 16—22 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subconoid or less commonly oblong, apex more or less attenuate-rounded, entire, straight or very slightly reflexed at apex, 13—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—9 μ. Ms. mostly grouped around P., loosely scattered over mycelium, to 505×7—9 μ, straight, rarely simple and obtuse, mostly 2—3-dentate to 12 μ. P. scattered, each on loose radiate subiculum, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—44×17—20 μ.

On *Blighia sapida*, Sierra Leone, Deighton 1206, type; Gold Coast, Hughes in IMI 47489, 47490, 47494.

(1023) *Meliola capensis* (K. & C.) Theiss. var. *cupaniae* Hansf., Sydowia **10**: 66. 1957.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae straight, cells mostly 10—15×6—7 μ, closely branched at wide angles, densely subrectangular-reticulate. Ch. opposite, subantrorse, closely crowded, very uniform, 11—14 μ long; straight or very slightly bent; stc. cylindric, 2—3 μ long; hc. conoid, attenuate rounded and often slightly reflexed at apex, entire, 10—13×7—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. Ms. few, loosely scattered, and grouped around P., straight, to 360×7—8 μ, apex simple and acute, or 2—3-dentate to 7 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 35—40×15—18 μ, middle cell sometimes slightly the largest.

On *Cupania americana*, Porto Rico, Stevens 7372, type; — On *C. vernalis*, Brazil, Theissen, Decad. f. bras. 21 (S).

(1024) *Meliola capensis* (K. & C.) Theiss. var. *hughesii* Deighton, Sydowia **11**: 100. 1957.

Cols. amphigenous, mostly hypophyllous, dense, velvety, to 6 mm. diam. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 20—30×6—9 μ. Ch. opposite or rarely alternate, antrorse or spreading, straight, or usually veriosly bent, 14—21 μ long; stc. cylindric, 2—6 μ long; hc. oblong, elliptic to clavate, widely obtuse, straight or bent, entire or with undulate to sublobate margin, 11—16×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—24×7—8 μ. Ms. numerous, scattered and grouped around P., straight, to 850×8—9 μ, apex 2—3-dentate to 10 μ or rarely simple and acute. P. scattered, verrucose, to 160 μ

diam. Sp. oblong, obtuse, 4-septate, constricted, 36—42×14—15× 10—11 μ.

On *Lecaniodiscus cupanioides*, Gold Coast, Hughes in IMI 47495—a, type (mixed with a few colonies of *M. capensis* var. *lecaniodisci*).

(1025) *Meliola capensis* (K. & C.) Theiss. var. *lecaniodisci* Hansf. & Deight., Mycol. Paper, IMI **23**: 46. 1948.

Cols. epiphyllous, rather dense, to 2 mm. diam. Hyphae straight, cells mostly 15—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. opposite, slightly antrorse, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. obtusely conoid, attenuate-rounded and often slightly recurved at apex, entire, 8—12×7—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×7—8 μ. Ms. thinly scattered and in small groups around P., straight, to 650× 8—9 μ, acute, or 2—3-dentate to 10 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—35×13—15 μ.

On *Lecaniodiscus cupanioides*, Sierra Leone, Deighton 438, 829, 438—a, 1601, 2088, 2268; Gold Coast, Hughes in IMI 37649, 37650, 37651, 37652, 37653, 37654, 37656, 48121. — On *Placodiscus splendidus*, Sierra Leone, Deighton 3526, 5126, 4072.

(1026) *Meliola capensis* (K. & C.) Theiss. var. *malayensis* Hansf., Sydowia **10**: 67. 1957.

Cols. epiphyllous, rather thin, to 4 mm. diam. or confluent. Hyphae straight, cells mostly 18—25×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite, straight or slightly reflexed, 13—17 μ long, slightly antrorse; stc. cuneate, 2—4 μ long; hc. ovate, more or less pointed at apex, which is slightly recurved, entire, 11—14×6—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—25×6—7 μ. Ms. thinly scattered, erect, straight, simple and acute, or 2—3-dentate to 5 μ, up to 650×10—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 33—37×15—17 μ.

On *Nephelium mutabile*, Malaya, Johnston 1056, type (IMI); Philippines, PBS 23762.

On *Litchi chinensis*, Tonkin, Duport 364, A 41 (Herb. Patouillard in F); ms. to 900 μ, sp. 35—47×15—19×12—13 μ; hypophyllous colonies closely resemble *M. commixta* Syd., but with larger hc., and over the main veins resemble the epiphyllous colonies; the former often widely confluent and velvety.

(1027) *Meliola capensis* (K. & C.) Theiss. var. *baileyana* Hansf., Proc. Linn. Soc. N. S. W. **78**: 75. 1953.

Cols. epiphyllous, to 2 mm. diam., subdense. Hyphae substraight, cells mostly 10—20×7—8 μ, branching opposite, subrectangular, rather closely reticulate. Ch. opposite, close, somewhat antriorse, but

often slightly recurved at apex, 12—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. cylindric to subconoid with attenuate-rounded apex, entire, 10—46×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23×6—8 μ. Ms. thinly scattered, straight, simple and acute, or 2—3-dentate to 10 μ, up tio 320×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—38×14—16 μ.

On *Sapindaceae* indet., Queensland, Bailey 817, type.

(1028) *Meliola capensis* (K. & C.) Theiss. var. *pancoviae* Hughes, Mycol. Paper, IMI 50: 33. 1953.

Cols. epiphyllous, rather dense, to 4 mm. diam. Hyphae straight, cells 12—22×7—10 μ, branching opposite, closely reticulate. Ch. opposite, straight, antrorse, 18—22 μ long; stc. cylindric, 2—6 μ long; hc. cylindric to ovate, rounded at apex, or sometimes irregularly angulose, 15—18×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×8—9 μ. Ms. scattered, few to numerous, straight, simple and acute, or sometimes 3-dentate to 5 μ, or 2-furcate to 7μ, up to 850×10—12 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, pbtuse, 4-septate, constricted, 45—51×18—21 μ.

On *Pancovia bijuga*, Gold Coast, Hughes in IMI 44258, type.

(1029) *Meliola capensis* (K. & C.) Theiss. var. *riparia* Deight., Sydowia **11**: 101. 1958.

Cols. amphigenous, dense, velvety, to 6 mm. diam. Hyphae substraight to finely sinuous, cells mostly 18—25×6—8 μ, branching opposite at wide angles, densely interwoven-reticulate. Ch. opposite, subantrorse, slightly recurved above, 12—15 μ long; stc. cylindric, 2—4 μ long; hc. ovate, often recurved and rounded to somewhat pointed at apex, entire or slightly irregular, 9—13×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—8 μ. Ms. numerous, scattered, straight, simple, acute, or very rarely 2-dentate, to 400×9—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, pbtuse, 4-septate, constricted, 33—38×14—15×12 μ.

On *Placodiscus riparius*, Sierra Leone, Deighton 2641, 4215, 4933.

Hyphophyllous colonies have more sinuous hyphae, with the ch. occasionally alternate, and the head cells rather more irregular.

(1030) *Meliola furcillata* Doidge, Trans. Roy. Soc. South Africa, **5**: 736. 1917.

incl. *Meliola nephelii* Sacc. var. *major* Hansf., Journ Linn. Soc. London **51**: 278. 1937.

Cols. amphigenous, thin, to 3 mm. diam. Hyphae straight to undulate, cells mostly 15—20×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or less commonly opposite, straight or slightly bent, antrorse or spreading, 17—23 μ long; stc. cylindric to cuneiate, 3—7 μ .ong; hc. cylindric to clavulate, or less

commonly slightly rounded-angulose, 11—17×7—11 μ. Ms. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 14—23×6—8 μ. Ms. scattered, or mostly grouped around P., straight, to 900×7—8 μ, apex simple and acute, or 2—3-dentate to 10 μ, sometimes slichtly torulose below apex. P. scattered, or in small groups, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—45×15—18 μ.

An *Allophylus monophylla*, South Africa, PRET 404, 1573, 8939, 10148, 11577, 14951; — On *A. melanocarpa*, South Africa, PRET 9716; — On *A.* sp., Uganda, Hansford 1338, 3695, 1443, 2009, 2020, 2332, 2299, 2405, 2597, 2604, 2664, 3009, 3117, 3195, 3317, 3476, 3363; — (?) On *Saplndaceae* indet., Ecuador, Stevens 81 (FLS), with setae all immature, simple and obtuse.

(1031) *Meliola deinbolliae* Hansf., Journ. Linn. Soc. London **51**: 273. 1937.

Cols. epiphyllous, rarely amphigenous, thin to dense, subvelvety, to 10 mm. diam. or confluent. Hyphae substraight to crooked, cells mostly 18—27×7—9 μ, branching opposite at wide angles, closely interwoven-reticulate. Ch. /alternate, spreading or antrorse, straight or bent, 15—24 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to cylindric, entire or angulose to sublobate, straight or bent, 11—18×8—14 μ. Mh. mixed with ch., or separate, opposite or alternate, ampulliform, 15—20×8—10 μ. Ms. numerous, straight, simple and acut obtuse, or 2-dentate to 10 μ, up to 370×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41×13—15 μ.

On *Deinbollia fulvo-tomentosa*, Uganda, Hansford 1950 (type), 2288, 2379, 2615, 3139, 3257, 3427, 3548; Sierra Leone, Deighton 741, 2021, 1018, 977, 2374, 442; — On *D. pinnata*, Gold Coast, Hughes in IMI 37118, 37110, 37111, 37112, 37113, 37114, 37115, 37116; — On *D.* ? *grandifolia*, Gold. Coast, Hughes in IMI 37120, 46809, 46810.

(1032) *Meliola allophyli* Doidge, Bothalia 2: 443. 1928.

Cols. amphigenous, to 3 mm. diam. or confluent, thin, subvelvety. Hyphae undulate to crooked, cells mostly 15—27×6—7 μ, branching opposite at acute to wide angles, loosely to closely reticulate. Ch. alternate, spreading or antrorse, straight or variously bent, 15—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. clavate and entire, or irregularly rounded-angulose to shallowly sublobate, often bent, 10—17×8—14 μ. Mh. mixed with ch., or sometimes on separate hyphae, opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. rather numerous, scattered, straight, simple and acute, or 2-dentate to 30 μ, up to 400×6—7 μ. P. in central group, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 35—40×13—17 μ.

On *Allophylus erosus*, South Africa, PRET 12404, 21009.

(1033) *Meliola fraseri* Hansf., Proc. Linn. Soc. N. S. W. **78**: 77. 1953.

Cols. amphigenous, thin to subdense, to 8 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 25—30×7—8 μ, branching opposite at wide angles, loosely reticulate, becoming closer in older colonies. Ch. alternate or to 90% opposite, straight or bent, preading or somewhat antrorse, 17—25 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with rounded apex, entire, often bent, 12—20×8—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 15—22×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 650×9—12 μ. P. scattered, verrucose, to 215 μ diam Sp. ellipsoid, obtuse, 4-septate,constricted, 46—55×18—21 μ.

On *Michocarpus* sp., New South Wales, Fraser 215, type; — On *Sapindaceae* indet., New South Wales, Fraser s. n.

(1034) *Meliola guioae-semiglaucae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 78. 1953.

Cols. mostly hypophyllous, thin and effuse, to 15 mm. diam., or widely confluent, thinly velvety. Hyphae substraight to crooked, cells mostly 20—30×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or about 2% opposite, straight or bent, spreading or somewhat ontrorse, on upper surface mostly 20—30 μ long, on low or surface more variable with longer stalk cells; stc. 5—20 μ long, cylindric, straight or bent; hc. oblong to widely ovate, 15—23×10—14 μ, on lower surface from subglobose to irregularly rounded-angulose. Mh. mixed with ch., alternate or opposite, ampulliform, 16—22×6—9 μ. Ms. scattered and grouped around P., more or less straight, simple, acute, to 450×7—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 45—54×19—21 μ.

On *Guioa semiglauca*, New South Wales, Fraser 116 (type), 150, 86.

(1035) **Meliola guioae** Hansf., comb. n.

= *Irene guioae* Hansf., Sydowia **9**: 5. 1955.

Cols. epiphyllous, very thin, smooth, to 3 mm. diam., denser in centre. Hyphae straight, cells mostly 20—25×6—7 μ, branching usually opposite at wide angles, often subrectangular, loosely to closely reticulate. Ch. opposite or to 10% alternate, spreading or slightly antrorse, usually straight, 11—16 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. cylindric to ovate, 10—13 ×6—8μ, entire. Mh. mixed with ch., not numerous, opposite or alternate, ampulliform, 13—18×6—9 μ. Ms. few, grouped around P., erect, simple, acute, to 200×7—8 μ, straight. P. scattered, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—48×18—21 μ.

On *Guioa perrottetii*, Philippines, PBS 2191, type. — (The copies of this in PRET and S show no setae).

(1036) *Meliola cupaniae-majoris* Batista, Anal. IV. Congr. Soc. Bot. Brazil, 1953, p. 104. 1954.

Cols. epiphyllous, to 2 mm. diam., thin. Hyphae substraight, branching usually opposite, acute, loosely to rather closely reticulate, cells mostly 25—40×6—7 μ. Ch. opposite or alternate in varying proportions, subantrorse, straight or slightly bent, 14—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate, piriform, or oblong, entire, 11—14×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—8 μ. Ms. thinly scattered and grouped around P., simple, straight, obtuse, to 350×7—8 μ. P. scattered or loosely grouped in centre, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—48×19—20 μ.

On *Cupania* sp., Brazil, IMUR 147, type. (= Inst. Pesq. Agron. Pernambruco 4176).

(1037) *Meliola lyoni* Stev., Bull. Bishop Mus. Honolulu **19**: 37. 1925.
= *Meliola cookeana* Speg. var. *major* Gaill., Le Genre *Meliola*, 1892, p. 74.

Cols. amphigenous, to 2 mm. diam., dense, subcrustose. Hyphae crooked, cells mostly 15—20×6—8 μ, branching opposite or irregular at wide angles, densely reticulate and nearly solid. Ch. alternate or opposite, more or less antrorse, straight or bent, 13—23 μ long; stc. cuneate or cylindric, 2—8 μ long; hc. globose to widely piriform, entire, 9—15×11—14 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, 14—20×7—9 μ. Ms. few, thinly scattered and grouped around P., sometimes wanting, to 340×7—9 μ, straight, simple, obtuse to subacute. P. scattered or in loose central group, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 43—49×17—19 μ.

On *Dodonaea* sp., Hawai, Stevens 843, type; 508, 87, 901, 865, 754; — On *D. viscosa*, Jamaica, Martyn 533; — On *D.* sp., Brazil, Ule, Herb. brasil. 385 (S, F), type of *M. cookeana* var. *major*, with spores 35—43×17—18×14—16 μ.

(1038) *Meliola samarensis* Yates, Philipp. Journ. Sci., C. Botany, **12**: 368. 1917.

Cols. on petioles, velvety, confluent and large, dense. Hyphae substraight to flexuous or tortuous, cells mostly 20—40×7—9 μ, branching opposite or irregular, acute,very densely interwoven-reticulate and becoming nearly solid. Ch. alternate or to about 10% opposite, straight or bent, spreading, 20—27 μ long; stc. cylindric, 3—10 μ long; hc. globose to ovate, straight or bent, entire, 12—20×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—10 μ. Ms. numerous, closely scattered, straight, simple, acute, to 360×10—13 μ. P. scattered, verrucose, to 250) diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—48×15—17 μ, the middle cell distinctly the largest.

On *Lepisanthes* sp., Philippines, PBS 24919, type (S).

Host determination from Stevens & Roldan, Philipp. Journ. Sci. **56**: 64. 1935.

(1039) *Meliola serjaniae* Stev. var. *major* Hansf., Sydowia **9**: 49. 1955.

Cols. epiphyllous, thin, velvety, to 5 mm. diam. Hyphae substraight, cells mostly 20—25×7—8 μ, branching usually opposite at wide angles loosely reticulate. Ch. alternate or about 2% opposite, more or less antrorse, straight or bent, 16—23 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. clavate with rounded apex, or 2—3-rounded-angulose above rarely sublobate, 12—16×9—13 μ. Mh. few, mixed with ch., or sometimes separate, opposite or alternate, ampulliform, 20—27×8—10 μ. Ms. scattered and grouped around P., more or less straight, simple, acute, to 700×8—10 μ. P. scattered, slightly verrucose, to 190 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, 40—48×16—20 μ.

On *Serjania* sp., Brazil, Theissen, Decad. fung. brasil. 7 (type); Rick, Fung. austr.-amer. 326; — On *S. caracasana*, Costa Rica, Sydow, Fung. exot. exs. 622 (K, S); — On *S.* sp., Brasil, Ule, Herb. brasil. 615 (S), with spores only 36—43×14—17 μ, and setae to 400 μ long.

(1040) *Meliola fraseri* Hansf., var. *minor* Hansf., Proc. Linn. Soc. N. S. W. **78**: 77. 1953.

Cols. epiphyllous, to 2 mm. diam., very thin. Hyphae substraight to slightly undulate, cells mostly 25—40×6—7 μ, branching opposite, acute, loosely interwoven-reticulate. Ch. alternate or to 50% opposite, slightly antrorse, usually straight, 20—25 μ long; stc. cylindric, 3—7 μ long; hc. cylindric to slightly clavate, entire, straight or slightly bent, 14—19×7—10. Mh. mixed with ch., alternate or opposite, ampulliform, 19—23×6—9 μ. Ms. thinly scattered, straight, simple, acute, to 350×7—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—44×16—18 μ.

On *Sapindaceae* indet., Queensland, Bailey 817 p. p., type.

(1041) *Meliola alectryonis* Hansf., Proc. Linn. Soc. N. S. W., **78**: 77. 1953.

Cols. amphigenous, mostly epiphyllous, and on petioles, thinly velvety, to 2 mm. diam., dense. Hyphae undulate to crooked, cells mostly 15—20×7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or opposite, straight or bent, more or less antrorse, 11—19 μ long; stc. cylindric, 3—6 μ long; hc. ovate to oblong or clavate, entire, 8—13×7—9 μ. Mh. few, mixed with ch., ampulliform, 13—17×6—8 μ. Ms. scattered, straight, simple, obtuse, to 330×7—9 μ. P. scattered, verrucose, to 170 μ diam. (immature). Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—42×15—18 μ.

On *Alectryon subcinereus*, New South Wales, Baker 630, type, Fraser 165.

(1042) *Meliola cardiospermi* Hansf. & Stev., Journ. Linn. Soc. London **51**: 271. 1937.

Cols. epiphyllous and caulicolous, to 4 mm. diam., crustose, velvety, very dense. Hyphae straight, cells mostly 15—30×8—9 μ, branching opposite at wide angles, densely reticulate and nearly solid. Ch. opposite or to 20% alternate, closely crowded, straight or slightly bent, 13—19 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose, or sometimes slightly rounded-angulose, 10—15×11—14 μ, mostly entire. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 350×8—11 μ. P. closely scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—43×16—19 μ.

On *Cardiospermum grandiflorum*, Uganda, Hansford 1323 (type), 1474, 1759, 2047, 2161, 2598, 3017; Sierra Leone, Deighton 1410, 2395; Gold. Coast, Deighton CB 923; Jamaica, Dennis J-153, Martyn 165.

M. mulleri Toro, Mycologia **32**: 173, 1940, is identical with the above; on *C. grandiflorum*, Minas Geraes, Brazil, Muller 632, type (USDA); the spores were described in error as 90×30 μ, almost exactly twice the correct size.

(1043) *Meliola doidgeae* Syd., Bothalia **2**: 457. 1928.

Cols. amphigenous, mostly epiphyllous, velvety, to 4 mm. diam., subdense, often confluent. Hyphae substraight to slightly undulate, cells mostly 10—20×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or to about 5% opposite, spreading or subantrorse, straight or slightly bent, mostly 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. cylindric to wide ovate, entire or irregularly rounded-angulose to sublobate, 8—12×8—13 μ. Mh. separate, opposite, ampulliform, 10—20×6—8 μ. Ms. fairly numerous, scattered, straight, acute to rather obtuse, simple to 360×6—7 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—43×10—14 μ.

On *Deinbollia oblongifolius*, South Africa, PRET 1572, 2520, 8404, 9504, 11896, 14703.

(1044) *Meliola acrotricha* Syd., Leafl. Philipp. Bot. **J**: 3113. 1925.

Cols. amphigenous, dense, to 5 mm. diam., thinly setose. Hyphae substraight, cells mostly 15—20×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or about 5% alternate, with frequent gaps of 1—3 cells without hyphopodia, more or less closely antrorse, straight or bent, 15—21 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to wide piriform, entire, or sometimes somewhat sinuous-lobate, or rounded-angulose, 10—16×9—13 μ.

Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23× 7—10 μ. Ms. scattered and grouped around P., straight, simple, acute to 520×10—11 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—43×16—18× 13—15 μ.

On *Trigonachras* sp., Philippines, Elmer 16426, type.

(1045) *Meliola paulliniana* Batista & Nascimento. Univ. do Recife, Inst. de Micol., Publ. 25: 7. 1956.

Cols. epiphyllous, to 5 mm. diam., dense. Hyphae substraight to flexuous, branching opposite at wide angles, closely reticulate, cells mostly 15—30×6—7 μ. Ch. opposite or alternate in varying proportions, subantrorse, usually straight, 13—19 μ long; stc. cylindric, 3—7 μ long; hc. oblong with rounded apex, entire, 9—12×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19× 6—8 μ. Ms. scattered, few,/straight, simple, obtuse, to 330×6—9 μ, gradually attenuate to about 4 μ at apex. P. scattered, verrucose, to 155 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—35× 12—13 μ.

On *Paullinia* sp., Brazil, Batista in IMUR 5187, type.

(1046) *Meliola thouiniae* Earle, Bull. New York Bot. Gard., 3: 308. 1904.

Cols. epiphyllous, thin, to 6 mm. diam., often effuse and confluent. Hyphae straight or slightly undulate, cells mostly 13—28× 5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. opposite or alternate, spreading or subantrorse, straight or slightly bent, 14—19 μ long; stc. cylindric, 2—5 μ long; hc. ovate to cylindric or clavulate, entire, straight or slightly recurved above, entire, widely rounded at apex, 11—15×6—8 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 15—20×6—7 μ. Ms. few, scattered or grouped around P., straight, simple, acute, to 500×7—8 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. widely ellipsoid, obtuse, 4-septate, slightly constricted, 33—40×15—17×12—14 μ.

On *Thouinia stricta*, Porto Rico, Heller 6435 (type), Stevens 7736, 7773, with setae very rarely 2-dentate to 5 μ; — On *T. trifoliata*, San Domingo, Ciferri, Mycofl. doming. exs. 200, Ciferri 2823, with setae all simple and acute, to 600 μ long.

(1047) *Meliola capensis* K. & C. var. *euphoriae* Hansf., Sydowia Beih. 1: 102. 19 57.

Cols. amphigenous, rather dense, thinner on upper surface, to 3 mm. diam., subvelvety. Hyphae on lower surface very crooked, straight on upper surface, opposite branched at wide angles, loosely to closely interwoven-reticulate, cells mostly 20—30×5—6 μ. Ch. opposite, antrorse or spreading, straight or slightly recurved above, 13—17 μ long; cuneate, 2—4 μ long; hc. conoid with attenuate-rounded apex, 10—14×6—8 μ, entire. Mh. mixed with ch., opposite

or alternate, ampulliform to conoid, 16—20×6—7 μ. Ms. grouped around P., straight, simple, acute, to 1100×9 μ, gradually attenuate to apex. P. scattered, verrucose, to 155 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×14—17×10—11 μ.

On *Euphoria* sp., Suli Is., PBS 36137 (type), 36155; — On *E. didyma*, Sulu Is., PBS 36149.

On the lower surface the crooked hyphae have capitate hyhopodia with elongate, often irregularly bent stc., to 11 μ long; hc. subglobose to ovate and often angulose; over the veins the mycelium and hypopdia approximate to those uon pper surface.

(1048) *Meliola capensis* (K. & C.) Theiss. var. **mataybae** (Stev.) Hansf., comb. n.

= *Meliola mataybae* Stev., Ann. Mycol. **26**: 228. 1928.

Cols. epiphyllous, 0,5 to 1 mm. diam., dense. Hyphae straight, branching opposite at wide angles, closely reticulate, cells mostly 10—15×6—7 μ. Ch. opposite, crowded, spreading, straight or slightly recurved above, 13—17 μ long; stc. cylindric, 2—4 μ long; hc. conoid with rounded apex, entire, 8—13×7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—8 μ. Ms. mostly grouped around P., straight, simple, obtuse, to 280×8—9 μ. P. scattered, verrucose, to 230 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 35—39×15—17 μ.

On *Matayba scrobiculata*, Costa Rica, Stevens 245, type (FLS) (F).

(1049) *Meliola capensis* (K. & C.) Theiss. var. *mataybae* (Stev.) Hansf. f. **longiaristata** (Cif.) Hansf., comb. n.

= *Meliola mataybae* Stev. var. *longiaristata* Cif., Mycopathologia **7**: 153. 1954.

Differs from the type of *M. mataybae* in longer setae, to 400 μ, and smaller perithecia, 100 μ or less.

On *Cupania americana*, San Domingo, Ekman 2764, type.

No specimens have been available to the present author, and the above descr. is that of Ciferri.

(1051) *Meliola integriseta* Speg. var. *allophyli* Cif., Ann. Mycol. **29**: 286. 1931.

Cols. hypophyllous, thin to 8 mm. diam., or effuse and confluent, thinly velvety. Hyphae crooked, cells mostly 25—30×5—6 μ, branching opposite or irregular at varying angles, irregularly and loosely interwoven-reticulate. Ch. alternate or very rarely (less than 1%) opposite, more or less antrorse, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. entire, ovate to clavate, 10—14×7—9 μ; occasional hyphopodia have long stc. Mh. rather few, mixed with ch., opposite or alternate, ampulliform, 15—20×5—7 μ. Ms. numerous, simple, subacute, to 400×6—8 μ, attenuate upwards and irregularly flexuous above, not hamate or uncinate. P. loosely

scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—42×15—18 μ.

On *Allophylus cominia*, San Domingo, Ciferri, Mycofl. doming. exs. 51, type.

(1052) *Meliola terecitensis* Hansf., Sydowia Beih. 1: 117. 1957.

Cols. amphigenous, very thin, to 6 mm. diam. Hyphae substraight to slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 30—50×7—9 μ. Ch. alternate, subantrorse, usually bent, 20—33 μ long; stc. cylindric to cuneate, 7—12 μ long; hc. piriform to irregularly rounded-angulose, versiform, often bent, 15—23×13—18 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—26×7—9 μ. Ms. thinly scattered, with shorter ones grouped around P., straight or sometimes sharply geniculate in upper part, simple, obtuse, to 700×9 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—45×15—17×12 μ.

On *Sapindaceae* indet., Ecuador, Stevens 81, p. p., type (FLS)

(1053) *Meliola serjaniae* Stev., Illinois Biol. Monogr. 2: 44. 1916.

Cols. mostly hypophyllous, thin, to 6 mm. diam., somewhat velvety. Hyphae substraight to undulate, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely reticulate, becoming denser in centre. Ch. alternate or about 1% opposite, straight or often irregularly bent, 17—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. irregularly stellate-lobate, often bent, 11—18×11—15 μ. Mh. mixed with ch., sometimes numerous, opposite or alternate, ampulliform, 15—25×8—9 μ. Ms. numerous, scattered and grouped around P., to 800×9—10 μ, those around P. to 300 μ long, simple, straight, acute. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—41×15—18 μ.

On *Serjania polyphylla*, Porto Rico, Stevens 425, typ3, 7654, 7219, 4181, Chardon 881, Whetzel 2576; San Domingo, Ciferri, Mycofl. doming. exs. 219, with ms. around P. often 2-dentate to 10; — On *S.* sp., Brazil, Rehm, Ascomyc. 1922, leg. Theissen, Rick 177, Ule, Herb. brasil. 581; — On *S. caracasana*, Costa Rica, Sydow, Fung. costaric. 387.

(1054) *Meliola tijucensis* Hansf., Sydowia 9: 77. 1955.

Cols. amphigenous, mostly hypophyllous, to 10 mm. diam. or confluent, rather thin and thinly velvety. Hyphae substraight to flexuous, cells mostly 25—40×7—10 μ, branching opposite or irregular at wide angles, becoming interwoven and rather closely reticulate. Ch. alternate, straight or bent, spreading to subantrorse, 20—22 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. from subglobose and entire, to ovate or shallowly angulose to sublobate, 15—22×12—21 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—32×8—11 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, obtuse, to 800×9—10μ), those around P. usually

much shorter. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—40×17—20×14—16 μ.

On *Allophylus* sp., Brazil, Ule, Herb. brasil. 2514 (F, S), type; Ule, herb. brasil. 2519 (S).

(1055) *Meliola erioglossi* Hansf., Sydowia Beih. 1: 107. 1957.

Cols. amphigenous, dense, velvety, to 6 mm. diam. or confluent. Hyphae substraight, branching opposite, acute to wide, densely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or very rarely (much less than 1%) opposite, straight or bent, antrorse or spreading, 17—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. subglobose to oblong, rounded-angulose to sublobate, 13—19×9—15 μ. Mh. separate, the hyphae extending beyond the colony, alternate or opposite, ampulliform, 16—23×8—9 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 340×7,5 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—43×14—17 μ.

On *Erioglossum rubiginosum*, Philippines, PBS 36237, type (FLS).

(1056) *Meliola parenchymatica* Gaill.. Bull. Soc. Mycol. France, 8: 180. 1892.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., subdense and somewhat velvety. Hyphae straight, cells mostly 15—25×7—9 μ, branching usually opposite at wide angles, closely reticulate. Ch. alternate, spreading, usually straight, 15—20 μ long; stc. cuneate, 3—5 μ long; hc. subglobose to wide piriform, entire, 12—16×9—13 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, acute, to 330×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 35—42×13—15 μ. Mh. fairly numerous, mixed with ch., opposite or alternate, ampulliform, 14—20×7—9 μ.

On *Sapindaceae* indet., Brazil, Ule, Herb. brasil. 375, type (S).

(1057) *Meliola equadorensis* Stev., Ann. Mycol. 26: 259. 1938.

Cols. epiphyllous, to 5 mm. diam., thin to subdense. Hyphae straight or slightly undulate, branching opposite at wide angles, loosely to closely reticulate, cells mostly 10—20×6—8 μ. Ch. alternate, very rarely opposite, spreading or antrorse-bent, 15—23 μ long; stc. cylindric, 3—7 μ long; hc. irregularly rounded-angulose, rarely nearly entire or sublobate, often bent, 11—18×9—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—9 μ. Ms. scattered and grouped around P., straight, simple, apex obtuse and pale (? immature), to 540×9 μ. Ps. scattered, verrucose, to 160 μ diam. Sp. Sp. subellipsoid, obtuse, 4-septate, constricted, 33—37×14—15 μ.

On *Sapindaceae* indet., Ecuador, Stevens 207, type (FLS, F).

(1058) *Meliola colladoi* Syd., Ann. Mycol. 18: 98. 1920.

Cols. epiphyllous, thin, minute or confluent. Hyphae 7—9 μ thick. Ch. alternate, oblong, 14—18 μ long; hc. obtuse, entire, 7—9 μ

thick. Mh. not seen. Ms. numerous, straight, simple, obtuse, to 600×5—7 μ. P. gregarious, to 150 μ diam., Sp. oblong, obtuse, 4-septate, constricted, 26—34×10—12 μ.

On *Arytera* sp., Philippines, Collado 6227, type.

Known to the present author only from the original description.

(1059) *Meliola otophorae* Yates, Philipp. Journ. Sci., C. Botany. **13**: 235. 1918.

Cols. amphigenous, thin to dense, to 5 mm. diam., often widely confluent. Hyphae sinuous to crooked, cells mostly 12—25 μ long, 5—6 μ wide, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate, straight or bent, spreading or antrorse, 12—18 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, ovate or oblong, usually angulose to sinuous-lobate, 9—13×7—12 μ. Mh. separate or mixed with ch., few, alternate or opposite, ampulliform, 12—18×6—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 480×7—9 μ. P. scattered, verrucose, to 150 μ diam./Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 29—33×12—14×9—11 μ.

On *Otophora fruticosa*, Borneo, Yates 107, type (K).

(1060) *Meliola sydowiana* Stev. & Larson, Ann. Mycol. **26**: 281. 1928.

Cols. amphigenous, to 20 mm. diam., dense, subvelvety. Hyphae crooked, cells mostly 25—37×6—8 μ, branching opposite, densely reticulate. Ch. alternate or more scattered, 17—25 μ long; variously bent, spreading; stc. cylindric to cuneate, 4—10 μ long; hc. clavate, cylindric, or very irregularly rounded-angulose to lobate, often irregularly bent, 13—19×8—15 μ. Mh. separate, usually around the colony edge, alternate or less commonly opposite, ampulliform, 12—18×6—8 μ. Ms. numerous in the larger colonies, scattered, straight, simple, acute, to 240×8—9 μ. P. closely scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 33—38×12—14 μ.

On *Sapindus saponaria*, Philippines, PBS 12499 (type), 2036, 1521, 27744, 27740, Baker, Fung. malay 365, Stevens 831, 1659, 1814, 1780; On *S. turczaninowii*, Philippines, PBS 482.

(1061) *Meliola paulliniae* Stev., Illinois Biol. Monogr. 2: 45. 1916.

Cols. epiphyllous, rarely also hypophyllous and on petioles, thin, velvety, to 10 mm. diam., sometimes confluent. Hyphae substraight to undulate, cells mostly 20—30×7—9 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 23—29 μ long; stc. straight or bent cylindric, 6—11×7—8 μ; hc. ovate to clavate, rounded or somewhat angulose towards the apex, straight or bent, 15—19×8—12 μ. Mh. mixed with ch., opposite or alternate, predominating on some hyphae, ampulliform, 15—22×8—10 μ. Ms. numerous, scattered, straight, simple, acute,

to 400×8—9 μ. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—40×13—15 μ.

On *Paullinia pinnata*, Porto Rico, Stevens 1149 (type), 3967-a, 7737, 55, 3914, 3956, 376, 4011, 8722; Seaver 359, Whetzel 2509; San Domingo, Ciferri, Mycofl. doming. exs. 58; Trinidad, ICTA 1811; Nowell in FLS 5863; Brazil, IMUR 221; Gold Coast, Deighton CB 926, 835; Sierra Leone, Deighton 1214, 2044, 260; Uganda, Dummer 2509, Hansford 1295, 1376, 1394, 1934, 1822, 2000, 2496, 3135, 3141, 3158; Comorin Is., Boivin s. n. (P); — On *P. cururu*, Panama, Stevens 158; — On ? *Paullinia* sp., Brazil. Rick 25 (S); Honduras, Standley 53679, 53681, 55462, 55265 (F); Congo Belge, Vanderyst 2691 (BRUX).

(1062) *Meliola integriseta* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 376. 1924.

= *Meliola sapindacearum* Speg. var. *integriseta* Speg., l. c., **10**: 328. 1909.

Cols. epiphyllous, to 1 mm. diam., rather dense and subvelvety. Hyphae substraight to undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—20×7—8 μ. Ch. alternate, antrorse, usually straight, 14—19 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to piriform, entire to slightly rounded-angulose, 11—14×10—13 μ. Mh. separate, opposite or alternate, ampulliform, 13—17×7—8 μ. Ms. scattered and grouped around P., slightly flexuous to almost straight, simple, obtuse, to 330×7—8 μ. P. loosely aggregate, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—39×13—15 μ.

On *Serjania fulta*, Argentina, SPEG 621, type.

(1063) *Meliola stevensii* Beeli, Bull. Jard. Bot. Bruxelles **7**: 98. 1920.

= *Meliola integriseta* Speg. var. *stevensii* (Beeli) Stev., Ann. Mycol. Berlin **26**: 254. 1928.

Cols. amphigenous, thin to subdense, 5—15 mm. diam., velvety. Hyphae substraight to undulate, branching opposite, acute, loosely to closely radiating-reticulate and interwoven, cells mostly 25—40×5—6 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 14—22 μ long; stc. cuneate, 2—5 μ long; hc. subglobose to vate, entire, 9—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—20×6—7 μ. Ms. numerous, scattered, straight, simple, obtuse, to 300×6—7 μ. P. scattered, or clustered in centre of colony, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—36×12—14 μ.

On ? *Sapindaceae* indet., Congo Belge, Vanderyst 2031, type (BRUX).

(1064) *Meliola lepisanthea* Sacc., Atti Acad. Ven.-Trent.-Istr., **10**: 61. 1917.

= *Meliola integriseta* Speg. var. *lepisanthea* (Sacc.) Stev., Ann. Mycol. **26**: 254. 1928.

Cols. epiphyllous, to 3 mm. diam., or widely confluent, dense, subvelvety. Hyphae substraight, cells mostly 20—25×6—7 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate or rarely (much less than 1%) opposite, more or less antrorse, straight or slightly bent, 13—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate, 9blong or cylindric with rounded apex, entire, usually straight, 10—14×5—7 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. numerous, scattered/,and grouped around P., straigh, simple, obtuse, to 290×6—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—34×12—13×8—10 μ.

On *Lepisanthes schizolepis*, Philippines, Baker, Fung. malay. 361-a, type, PBS 32086 (FLS); 24044 (USDA); — On *Lepisanthes* spp., Philippines. PBS 1279, 24058; — On *Eriostemon rubiginosum*, Philippines, Clemens 6918.

(1065) *Meliola lepisanthea* Sacc. var. *schmideliae* Hansf., Sydowia **9**: 43. 1955.

Cols. epiphyllous, to 3 mm. diam. or confluent, thin. Hyphae substraight to undulate, cells mostly 15—25×6—8 μ, branching opposite or irregular at acute angles, loosely reticulate. Ch. alternate, more or less antrorse, usually straight, 12—19 μ long; stc. cuneate, 3—7 μ long; hc. globose, entire, 9—13×9—11 μ. Mh. rather few, mixed with ch., opposite or alternate, ampulliform, 15—18×6—8 μ. Ms. few, grouped around P., more or less straight, simple, obtuse, to 200×6—7 μ. P. in loose central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—34×12—14 μ.

On *Schmidelia* sp., Ceylon, type in K.

Host Family 200. Aceraceae.

(1066) *Meliola aceris* Yamam., Trans. Nat. Hist. Soc. Formosa, **30**: 416. 1940.

Cols. amphigenous, mostly hypophyllous, slightly velvety, dense, to 7 mm. diam. Hyphae undulate, cells 18—30×7—9 μ, branching opposite or irregular. Ch. alternate or very rarely opposite, slightly bent, 16—23 μ long; stc. cylindric, 5—8 μ long; hc. oblong, ellipsoid or subglobose, entire, 10—16×8—13 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—26×7—9 μ. Ms. fairly numerous, to 475×9—10 μ, straight or sometimes geniculate above, simple, acute or sometimes dentate to 23 μ. P. in loose central group. slightly verrucose,

to 240 μ diam. Sp. oblong, obtuse, 4-septate, not or slightly constricted, 39—47×12—20 μ.

On *Acer oblongum*, Formosa, Yamamoto, type (not seen by present author).

Host Family 202. Melianthaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.6330	Cols. thin; hyphae straight to slightly undulate; hc. large, irregularly lobate	*bersamae*	(1067)
3101.4220	Cols. thin; hyphae slightly undulate; hc. ovate-piriform or slightly angulose	*masakensis*	(1068)

Meliola

3133.4222	Cols. dense, velvety; hyphae sinuous; hc. ovate-oblong, often bent; ms. irregularly dentate to 30 μ; sp. narrow.....	*chorleyi*	(1069)
3111.5342	Cols. dense, crustose, velvety; hyphae substraight; hc. angulose to sublobate; ms. acute	*bersamae*	(1070)
3111.5232	Cols. dense, velvety; hyphae straight; hc. globose, entire; ms. acute	*bersamicola*	(1071)

(1067) *Asteridiella bersamae* Hansf., Sydowia Beih. **1**: 118. 1957.

Cols. epiphyllous, smooth, with central group of perithecia, to 2 mm. diam. Hyphae slightly undulate, cells mostly 30—35×10—11 μ, branching usually alternate or unilateral, acute, closely reticulate. Ch. alternate or more scattered, more or less antrorse, straight or slightly bent, 35—45 μ long; stc. cylindric to cuneate, 10—17 μ long; hc. versiform, irregularly and deeply stellate-lobate, 22—32×25—35 μ. Mh. mixed with ch., numerous, toward centre of colony, sometimes on separate hyphae, opposite or unilateral, ampulliform, 20—25×8—10 μ. P. aggregate, rough, to 280 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted rather strongly, 58—65×22—28×19—22 μ.

On ? *Bersama* sp., Uganda, Hansford 1783, type (it is possible the type host is *Trichilia* sp.); — (On *Trichilia* spp., Uganda, Hansford 3157, 3443, 3541).

(1608) *Asteridiella masakensis* Hansf., Sydowia **10**: 49. 1957.

= *Irenina masakensis* Hansf., Proc. Linn. Soc. London **153**: 9. 1941.

= *Meliola hansfordiana* Cif., Mycopathologia **7**: 88. 1954.

Cols. amphigenous, numerous and confluent, rather thin. Hyphae slightly undulate, cells mostly 30—45×7—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading or subantrorse, straight or slightly bent, 17—29 μ long; stc. cylindric to cuneate, 6—8 μ long; hc. ovate to piriform, entire or slightly angulose, 10—20×

11—16 μ. Mh. separate, opposite or sometimes alternate, ampulliform, 14—18×6—8 μ. P. scattered, verrucose, to 180 μ diam., surface cells obtusely conoid. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 39—44×17—19 μ.

On *Bersama* sp., Uganda, Hansford 2123, type.

(1069) *Meliola chorleyi* Hansf., Journ. Linn. Soc. London **51**: 540. 1938.

Cols. hypophyllous, to 10 ,mm. diam., dense, velvety. Hyphae very sinuous to crooked, cells mostly 25—45×6—7 μ, branching opposite, acute, densely reticulate. Ch. alternate or opposite, straight or bent, spreading or antrorse, 14—20 μ long; stc. cylindric, often bent, 3—7 μ long; hc. ovate to cylindric, often bent, entire, 8—14×7—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Ms. very numerous, scattered, straight, to 400×7—8 μ, apex 2—4-dentate to 20 μ, or 2-furcate to 20 μ with ninutely dentate branches. P. scattered, verrucose, to 190 μ diam. Sp. narrow ellipsoid, cylindric to subfusoid, ends obtuse to subconoid, 4-septate, slightly constricted, 42—47×11—13 μ.

On ? *Bersama* sp., Uganda, Hansford 2035, type (the host may possibly have been *Trichilia* sp.); — (On *Trichilia* sp., Uganda, Hansford 2347, 2357, 2455).

(1070) *Meliola bersamae* Hansf., Journ. Linn. Soc. London **51**: 240. 1937.

Cols. amphigenous, rather dense, to crustose, to 5 mm. diam., subvelvety. Hyphae straight to slightly undulate, cells mostly 12—18 μ long and 7—10 μ thick, branching opposite or irregular, acute to wide, densely reticulate-radiating. Ch. alternate, crowded, more or less closely antrorse, straight or bent, mostly 25—35 μ long; stc. cuneate, 7—15 μ long; hc. ovate, piriform or slightly irregular, entire, rounded-angulose or sublobate, 15—22×10—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered, straight, simple, acute or slightly obtuse, to 360×7—11 μ. P. scattered, verrucose, to 300 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, rather strongly constricted, 48—56×20—22 μ.

On *Bersama* sp., Uganda, Hansford 1748 (type), 1850, 1823, 2091, 3435.

(1071) *Meliola bersamicola* Hansf., Journ. Linn. Soc. London, **51**: 270. 1937.

Cols. mostly epiphyllous, velvety, dense, 2—5 mm. diam. Hyphae straight, cells mostly 20—35×9—11 μ, branching opposite or alternate, densely reticulate. Ch. alternate, spreading or slightly antrorse, usually straight, 20—28 μ long; stc. cylindric, 5—7 μ long; hc. globose to wide ovate, entire, 15—20×14—17 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 15—20×8—11 μ. Ms. numerous,

straight, simple, acute, to 360×10—12 μ. P. scattered, verrucose, to 220 μ diam. Sp. cylindric, obtuse, 4-septate, 50—56×14—17 μ.

On ? *Bersama* sp., (possibly *Trichilia* sp.), Uganda, Hansford 1783 (type), 1542, 1949; — (Also on *Trichilia* and *Entandrophragma* — see above under *Meliaceae*).

Host Family 204. Staphyleaceae.

(1072) *Irenopsis portoricensis* Stev., Ann. Mycol. **25**: 433. 1927.

Cols. amphigenous, to 2 mm. diam., dense, smooth. Hyphae substraight, cells mostly 25—40×9—12 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading or more or less antrorse-bent, 35—60 μ long; stc. cuneate to cylindric, 10—30 μ long; hc. subglobose to piriform, entire or rounded-angulose to sublobate, 20—43×18—25 μ. Mh. few, mixed with ch., ampulliform, 18—25×9—12 μ, mostly alternate. P. loosely scattered, to 300 μ diam.; ps. numerous, erect-spreading, substraight to flexuous, not uncinate, obtuse, the apex often slightly swollen to clavulate, to 150×6—7 μ, smooth, 2—3-septate. Sp. oblong, obtuse, 3-septate, slightly constricted, 54—68×18—21 μ.

On *Turpinia paniculata*, Porto Rico, Stevens 3685 (type), 8922; San Domingo, Ciferri, Mycofl. doming. exs. 209.

(1073) **Appendiculella turpiniae** (Yamam.) Hansf., comb. n.

= *Irenina turpiniae Yamam.*, Trans. Nat. Hist. Soc. Formosa, **31**: 50. 1941.

Cols. amphigenous, to 5 mm. diam. or confluent, thin to subdense. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely to closely interwoven-reticulate, cells mostly 30—50×7—10 μ. Ch. alternate or more scattered, subantrorse, straight or bent, 35—45 μ long; stc. cuneate, 11—17 μ long; often bent, and sometimes with irregularly lobate sides; hc. versiform, straight or bent, irregularly stellate-lobate, 20—30×9—10 μ. Mh. mixed with ch., alternate, ampulliform, 18—25×9—10 μ. Ms. only grouped around P., abnormal, radiating, repent, simple, straight or flexuous, obtuse, septate, to 130×11 μ, wall 2—2,5 μ thick, surface indistinctly brownish-asperate. P. loosely scattered, globose, to 260 μ diam.; upper wall cells mostly produced into clear, subhyaline to pale brown, conic to cylindric, obtuse appendages, to 80 μ long by 15—25 μ diam. at base, attenuate to about 10 μ below the apex, which is bent to subuncinate; wall thin, transversely striate, continuous. Sp. cylindric to fusoid, obtuse, 3-septate, slightly constricted, 60—68×17—19 μ, often slightly bent.

(On *Turpinia formosana*, Formosa, Yamamoto, type — not seen by present author); — On *Turpinia pomifera*, Philippines, PBS 30109 (FLS).

The description of mycelium, hyphopodia and spores, givenby

Yamamoto, is considered sufficiently comparable with the above description of PBS 30109, to warrant the synonomy adopted. The best genus for this species is regarded as *Appendiculella*, for the following reasons:

(1) No species of *Meliola* is hitherto known with perithecial appendages,

(2) The "mycelial setae" described above are quite different from those commonly found in species of *Meliola*, where they are invariably erect, and never granulose on the surface. Those in the present species are closer to those on the perithecia of species of *Irenopsis*, but differ in being produced around the base of the perithecium, on mycelial hyphae, and in being repent, as well as far longer than any hitherto discovered in that genus.

Host Family 205. Anacardiaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3301.4220 Cols. thin; hyphae substraight; hc. piriform, angulose to sublobate; ps. numerous, uncinate

3301.4220 Cols. thin; hyphae substraight; hc. piriform, angulose to sublobate; ps. numerous, uncinate or contorted above, to 115 μ ..... *comocladiae* (1074)

2401.6340 Cols. dense; hyphae substraight; hc. large, subglobose-piriform to sublobate; ps. substraight, obtuse, to 150 μ..... *portoricensis* (1075)

Meliola

3141.5321 Cols. thin, subvelvety; hyphae straight or flexuous; hc. ovoid-oblong, entire; ms. 2-dichotomous ..... *tapirirae* (1076)

3141.4231 Cols. dense, velvety; hyphae undulate to sinuous; hc. subglobose-piriform, entire; ms. short-furcate or cristate-dentate..... *brachyodonta* var. *dummeri* (1077)

31¾1.4231 Cols. thin, subvelvety; hyphae undulate; hc. ovate-piriform, entire; ms. dentate to short-furcate ..... *brachyodonta* (1078)

31¾3.3223 Cols. thin, subvelvety; hyphae undulate to flexuous; hc. small, ovate-cylindric, entire; ms. dentate to short-furcate ..... *heterodonta* (1079)

3133.3221 Cols. dense, subvelvety; hyphae substraight; hc. small, ovate-piriform, entire; ms. dentate to 10 μ ..... *geniculata* var. *minor* (1080)

3131.5333 Cols. dense, velvety; hyphae substraight; hc. large, ovate-piriform, entire; ms. 2—3-dentate to 12 μ ..... *trichoscyphae* (1081)

3131.5331 Cols. thin, subvelvety; hyphae straight to finely sinuous; hc. globose-ovate, entire; ms. 2—4-dentate to 8 μ..... *geniculata* var. *antrocaryonis* (1082)

3131.5231 Cols. thin; hyphae undulate to flexuous; hc. cylindric-clavate, entire; ms. 4—5-cristate-dentate to 6 μ, teeth obtuse ..... *pseudospondiadis* (1083)

3131.4234 Cols. dense, velvety; hyphae straight to crooked; hc. cylindric-conoid, entire; ms. (a) to 1200 μ, 2—3-dentate, (b) to 420 μ, dentate-furcate ..... *multiseta* (1084)

3131.4223 Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-cylindric, entire; ms. 2—4-dentate ..... *opaca* (1085)

3131.4222 Cols. thin; hyphae substraight; hc. ovate to subconoid, entire; ms. 2—3-dentate ..... *anacardii* (1086)

3131.4231 Cols. subdense, subvelvety; hyphae substraight to undulate; hs. ovate-cylindric, entire; ms. 2—3-furcate and cristate-dentate *sorindeiae* (1087)

3131.4221 Cols. thin; hyphae substraight; hc. ovate to subglobose, entire; ms. 2—4-cristate-dentate *geniculata* (1088)

31⅓3.3222 Cols. thin; hyphae substraight; hc. oblong-ovate, entire; ms. acute or 2—3-dentate .... *weigeltii* (1089)

3133.3321 Cols. thin; hyphae straight to sinuous; hc. subglobose-ovoid, entire; ms. 2—3-dentate .. *weigeltii* var. *fraxinifoliae* (1090)

31⅓1.5333 Cols. dense, velvety; hyphae substraight to sinuous; hc. larger, ovate-cylindric, entire; ms. obtuse, acute or minutely dentate ..... *mangiferae* (1091)

3131.3221 Cols. thin; hyphae flexuous; hc. globose; ms. crenulate near dentate apex ..... *tapiriricola* (1092)

3121.5342 Cols. dense, velvety; hyphae flexuous; hc. irregularly stellate-lobate; ms. flexuous to uncinate-circinate, obtuse ..... *rhois* (1093)

3121.4232 Cols. very dense, subcrustose; hyphae undulate; hc. irregularly lobate; ms. arcuate to uncinate, obtuse ..... *rhois* var. *lithraeae* (1094)

3121.5332 Cols. thin, subvelvety; hyphae substraight; hc. oblong-ovate, entire; ms. hamate, acute *hamata* (1095)

3121.4222 Cols. dense, velvety; hyphae sinuous to crooked; hc. ovate-piriform, angulose to sublobate; ms. hamate or twisted, obtuse ... *irradians* (1096)

3113.4322 Cols. thin; hyphae substraight; hc. ovate to cylindric, entire; ms. obtuse ..... *anacardiacearum* (1097)

3121.3232 Cols. dense; hyphae flexuous; hc. clavate, entire; ms. obtuse ..... *lanigera* (1098)

3113.4233 Cols. dense, velvety; hyphae substraight to undulate; hc. cylindric-ovate, entire; ms. acute, stout ..... *pachychaeta* (1099)

3112.3221 Cols. thin; hyphae straight; hc. cylindric, entire; ms. acute ..... *nicaraguensis* (1100)

3111.6334 Cols. dense, velvety; hyphae straight or undulate; hc. oblong, entire, large; ms. acute *buchananiae* (1101)

3111.6333 Cols. dense, velvety; hyphae crooked; hc. ovate to irregularly lobate; ms. obtuse to subacute, arcuate or crooked, not uncinate .. *holigarnae* (1102)

3111.5332	Cols. dense, subcrustose, velvety; hyphae substraight to sinuous; hc. irregularly lobate; ms. straight, acute	*rhois* var. *africana*	(1103)
3111.4333	Cols. dense; hyphae crooked to sinuous; hc. cylindric to sublobate; ms. acute	*nothopegiae*	(1104)
3111.4322	Cols. subdense, subvelvety; hyphae substraight; hc. cylindric, entire; ms. acute	*melanochylae*	(1105)
3111.4242	Cols. dense, subvelvety; hyphae crooked; hc. cylindric-clavate, entire; ms. obtuse	*chilensis*	(1106)
3111.4223	Cols. thin, subvelvety; hyphae straight; hc. ovate, entire; ms. acute	*semecarpicola*	(1107)
3111.4232	Cols. dense to thin, velvety; hyphae undulate; hc. ovate-oblong, or sublobate; ms. acute	*rhoina*	(1108)
3111.4231	Cols. dense; hyphae undulate; hc. ovate-piriform or slightly angulose; ms. obtuse	*rhoina* var *schini*	(1109)
3111.4231	Cols. subdense; hyphae tortuous; hc. ovate, angulose to sublobate; ms. acute	*loxostylidis*	(1110)
3111.4223	Cols. thin; hyphae substraight to flexuous; hc. globose-piriform, usually entire; ms. obtuse	*semecarpi*	(1111)

(1074) *Irenopsis comocladiae* Stev., Ann. Mycol. 25: 440. 1927.
= *Meliola comocladiae* Stev., Illinois Biol. Monogr. 2: 25. 1916.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., smooth. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 12—25×6—7 μ. Ch. alternate or less than 1% opposite, straight or slightly bent, 13—21 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. piriform, entire or rounded-angulose, 10—17×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×8—9 μ. P. scattered, globose, verrucose, to 150 μ diam.; ps. 2—8, straight below, uncinate or contorted at apex, obtuse, smooth, continuous, to 115×8—10 μ, wall thin. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×17—19×13—14 μ.

On *Comocladia glabra*, Porto Rico, Stevens 9015 (type), 7056, 7484, 760.

(1075) *Irenopsis portoricensis* Stev., Ann. Mycol. 25: 433. 1927. (2401.6340)

For descr. see under *Staphyleaceae*, above.

On *Spondias mombin*, Porto Rico, Stevens 749 *W*(FLS).

(1076) *Meliola tapirirae* Stev. & Tehon, Mycologia 18: 13. 1926.

Cols. amphigenous, mostly hypophyllous, dense, effuse, becoming more or less velvety in centre. Hyphae substraight to flexuous, cells mostly 15—25×5—7 μ, branching mostly opposite, acute to wide, becoming closely reticulate. Ch. alternate or to about 1% opposite, straight or bent, antrorse to retrorse, 14—20 μ lonf; stc. cylindric to cuneate. 2—5 μ long; hc. subglobose, ovate or oblong, entire, broadly rounded or rarely somewhat attenuate at apex, 10—17×8—12 μ.

Mh. mixed with ch., especially in centre of colony, opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. few to numerous, scattered, straight, to 280×9—11 μ, 2—3-dichotomous above, branches wide spreading, 1-ry to 60 μ, 2-ry to 70 μ, 3-ry to 20 μ and 2—3-dentate at apices. P. scattered, verrucose, to 190 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, rather deeply constricted, 44—52×18—21 μ.

On *Tapirira* sp., British Guiana, Stevens 330 (type), 338 (FLS).

(1077) *Meliola brachyodonta* Syd. var. **dummeri** Hansf., comb. n.
= *Meliola dummeri* Hansf., Journ. Linn. Soc. London **51**: 540. 1938.

Cols. mostly epiphyllous, to 3 mm. diam., dense, velvety. Hyphae sinuous, cells 17—23×7—8 μ, branching alternate or irregular, not opposite, acute, closely reticulate. Ch. alternate or unilateral, spreading or antrorse, straight or bent, 16—22 μ long; stc. cylindric, to cuneate, 3—8 μ long; hc. globose to clavate, entire, straight or bent, 10—16×9—13 μ. Mh. separate, mostly in centre of colony, opposite or alternate, ampulliform. Ms. numerous, closely scattered, straight, to 280×7—9 μ, apex cristate with 2—4 short branches to 35 μ long, these 2—4-cristate-dentate to 12 μ, acute. P. scattered, verrucose, to 240 μ diam. Sp. oblong obtuse, 4-septate, constricted, 37—43×14—16 μ.

On *Rhus villosa*, Uganda, Hansford 2265 (type), 2012, 2032, 2279, 2406, 2385, 2500, 2780, 2918, 3357, 3486, 3565, 3417, Dummer 1321; Congo Belge, Hendrickx 2114.

(1078) *Meliola brachyodonta* Syd., Bothalia **2**: 442. 1928.
= *Meliola geniculata* Syd. & Butl. var. *macrospora* Doidge, Trans. Roy. Soc. South Africa **8**: 109. 1920.
= *Meliola dummeri* Hansf. var. *brachyodonta* (Syd.) Hansf., Proc. Linn. Soc. London **157**: 180. 1946.

Cols. epiphyllous, to 3 mm. diam., or effuse and irregular, subednse, velvety. Hyphae undulate, cells mostly 16—36×6—8 μ, branching alternate, acute, closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 16—24 μ long; stc. cylindric to cuneate 5—10 μ long; hc. ovate to clavate, entire, 10—16×8—12 μ. Mh. mixed with ch., opposite or alternate, to 25 μ long, ampulliform. Ms. numerous, scattered and grouped around P., straight, to 300×6—8 μ, apex 2—3-furcate to 10 μ, branches simple and acute, or 2—3-dentate to 9 μ. P. in central group, verrucose, to 240 μ diam., surface cells convex to conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×16—18 μ.

On *Rhus tomentosa*, South Africa, PRET 10879, type; — On *Euroschinus falcata*, New South Wales, Fraser s. n.

(1079) *Meliola heterodonta* Syd., Ann. Mycol. **14**: 357. 1916.

Cols. amphigenous, mostly hypophyllous, very thin, to 10 mm. diam., subvelvety. Hyphae undulate, cells mostly 20—30×6 μ, branching usually opposite at wide angles, loosely reticulate. Ch.

alternate or to 5% opposite, spreading, straight or bent, 12–19 μ long; stc. cylindric, 2–9 μ long; hc. ovate to cylindric, entire, straight or bent, 10–14×6–8 μ. Mh. very numerous, mixed with ch., opposite or alternate, narrow ampulliform, 20–30×5–7 μ, neck elongate. Ms. thinly scattered and grouped around P., straight, to 900–10×14 μ, apex rarely simple and acute, mostly 2–4-dentate to 15 μ; those around P. shorter and often 2-furcate to 20 μ with dentate branches. P. thinly scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 35–40×11–13 μ.

On *Dracontomelum* dao, Philippines, Baker in PBS 4031, type; — On *D.* sp., Philippines, Baker, Fung. malay. 252.

(1080) *Meliola geniculata* Syd. & Butl. var. *minor* Hansf., Sydowia **9**: 17. 1955.

Cols. epiphyllous, subdense, thinly velvety, to 3 mm. diam. or confluent. Hyphae substraight, cells mostly 15–25×6–7 μ, branching usually opposite, acute, closely reticulate. Ch. alternate or about 2% opposite, straight or bent, spreading or antrorse, 12–16 μ long; stc. cylindric to cuneate, 2–5 μ long; hc. cylindric to piriform, entire, usually straight, 9–12×8–10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12–17×7–9 μ. Ms. scattered, and sometimes grouped around P., straight, to 280×7–9 μ, apex 2–4-dentate to 10 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 29–35×12–14×11–12 μ.

On *Anacardiaceae* indet., Peru, Ule, Herb. brasil. 3264, type. (K).

(1081) *Meliola trichoscyphae* Deight., Sydowia **11**: . 1958.

Cols. epiphyllous, rarely also hypophyllous, thin to subdense, loosely velvety, to 5 mm. diam. Hyphae substraight to slightly sinuous, branching usually opposite at wide angles, loosely to closely reticulate, cells mostly 25–30×8–11 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 22–35 μ long; stc. cuneate to cylindric, 5–14 μ long; hc. subglobose, ovate or clavate, rounded or subtruncate at apex, straight or slightly bent, entire or slightly angulose, 16–24×13–21 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20–30×8–12 μ. Ms. scattered and grouped around P., substraight or very slightly bent, to 750(–920)×9–10 μ, apex 2–3-dentate to 12 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 53–60×21–24×18–20 μ.

On *Trichoscypha smeathmannii*, Sierra Leone, Deighton 5786, type (IMI 56519-a).

(1082) *Meliola geniculata* Syd. & Butl. var. *antrocaryonis* Deight., Sydowia **5**: 6. 1951.

(3131.5331)

Cols. epiphyllous, rather thin, slightly velvety, to 2 mm. diam. Hyphae substraight to finely sinuous, cells mostly 20–40×6–8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate,

spreading or antrorse, straight or bent, occasionally reflexed, 15—22 μ long; stc. cylindric, 4—8 μ long; hc. globose to ovate, entire, 12—15× 9—14 μ. Mh. mixed with ch., opposite or mostly alternate, ampulliform, 15—22×7—8 μ. Ms. scattered, straight, to 280×7—9 μ, apex 2—4-cristate-dentate to 8 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—52×19—22×14—16 μ.

On *Antrocaryon micraster*, Sierra Leone, Deighton 2557, type (IMI).

(1083) *Meliola pseudospondiadis* Hansf. & Deight., Mycol. Paper, IMI, **23**: 46. 1948.

Cols. epiphyllous, rarely also hypophyllous, rather thin, to 3 mm. diam. Hyphae undulate to flexuous, cells mostly 25—45×7—8 μ, branching opposite or irregular, at wide angles, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 23—27 μ long; stc. cylindric, 5—10 μ long; hc. cylindric to ovate or clavulate, entire, 15—21×9—11 μ. Mh. mixed with ch., alternate or less commonly opposite, ampulliform, 20—26×7—9 μ. Ms. scattered, straight, to 250×7—9 μ, apex 4—5-cristate-dentate to 6 μ, tips obtuse. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 47—54×16—19 μ, the middle cell often slightly the largest.

On *Pseudospondias microcarpa*, Sierra Leone, Deighton 1837, 1838; Congo Belge, Vanderyst 38693, 38697, 38699, 42845, 44322. (Brux).

(1084) *Meliola multiseta* Beeli, Bull. Soc. Roy. Bot. Belge, **60**: 99. 1927.

Cols. hypophyllous, dense, velvety, to 3 mm. diam. or confluent. Hyphae substraight to crooked, branching opposite or irregular at wide angles, cells 20—35×6—7 μ, closely interwoven-reticulate. Ch. alternate, spreading, usually bent to arcuate, 20—25 μ long; stc. cylindric, 3—7 μ long; hc. cylindric to conoid, entire, usually bent, 14—20×6—9 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 182—5×6—8 μ. Ms. biform: (a) scattered on mycelium, straight, to 1200×9—11 μ, apex 2—3-dentate to 10 μ, (b) grouped around P., to 420×8—9 μ, apex more dentate or shortly furcate to 15 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—50×14—17×13—14 μ.

On ? *Anacardiaceae* indet., Congo Belge, Vanderyst 9872, type (BRUX).

This is very similar to *M. trifurcata* Cif. on *Meliaceae*, and the present host determination is doubtful.

(1085) *Meliola opaca* Syd., Leafl. Philipp. Bot. **6**: 1924. 1913.

Cols. amphigenous, velvety, dense, to 3 mm. diam. Hyphae substraight to crooked, cells mostly 25—45×6—8 μ, branching opposite or irregular, at wide angles, closely radiating-reticulate. Ch.

alternate or very rarely opposite (much less than 1%), spreading, straight or bent, 18—30 μ long; stc. cylindric, 3—10 μ long; hc. ovate, oblong or cylindric, straight or bent. 13—24×7—9 μ. entire. Mh. mixed with ch., opposite or alternate, elongate conoid-ampulliform, 20—35×6—7 μ. Ms. scattered. numerous, straight, to 420×9—11 μ, apex 2—4-dentate to 15 μ. P. in central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—48×15—17 μ.

On *Dracontomelum dao*, Philippines, PBS 13457, type (S, FLS).

(1086) *Meliola anacardii* Zimm., Centralbl. f. Bakt. Abt. 2 8: 151. 1902.

incl. var. *minor* Hansf. Proc. Linn. Soc. London **160**: 127. 1948.

Cols. epiphyllous thin to 1 mm. diam. Hyphae substraight cells mostly 20—30×6 μ branching opposite acute to wide loosely reticulate. Ch. alternate spreading or subantrorse usually straight 15—22 μ long; stc. cylindric to cuneate 3—7 μ long; hc. rarely globose. mostly oblong, ovate or subconoid, entire, 11—16×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. scattered and grouped around P., straight, to 350×6—9 μ, apex 2—3-dentate to 8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—47×17—19 μ.

On *Anacardium occidentale*, Java, Zimmermann (type in Amani Herb.); San Domingo, Ciferri, Mycofl. doming. exs. 248; Costa Rica, Stevens 506, 1247; British Guiana, Stevens 65 p. p.; Philippines, PBS 21905; 21898. 21899, 39274; Malaya, Johnston 1231, with setae to 450 μ, and Johnston 214 with setae to 510 μ.

The type collection has larger spores than the other specimens above, in which they measure 35—41×16—19×12—14 μ. The Ciferri specimen has setae with many small teeth at and near the apex, and sometimes with 2 branches to 20 μ long.

(1087) *Meliola sorindeiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 47. 1948

Cols. amphigenous, to 8 mm. diam. or confluent, rather dense, thinly velvety. Hyphae substraight to undulate, cells mostly 20—25×6—8 μ, branching opposite at wide angles, rather densely reticulate in centre. Ch. alternate, rarely (less than 1%) spreading or subantrorse, straight or slightly bent, 17—24 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. oblong, ovate or clavulate, entire, straight or slightly bent. 11—18×8—10 μ. Mh. elongate ampulliform, few, mixed with ch., alternate or opposite, 20—24×6—7 μ. Ms. numerous, scattered, straight, to 220×7—8 μ. apex cristate with short 2—3-dichotomous branches to 12 μ long, these 2—3-dentate-cristate to 10 μ. P. scattered. each on a radiating subiculum of exhyphopodiate hyphae, verrucose, to 200 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, 38—47×15—16 μ. the central cell usually slightly the largest.

On *Sorindeia juglandifolia*, Sierra Leone, Deighton 441 (type), 2351, 1902, 1019.

(1088) *Meliola geniculata* Syd. & Butl., Ann. Mycol. 9: 381. 1911.

Cols. epiphyllous, very thin, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×5—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or much less than 1% opposite, spreading or slightly antrorse, straight or slightly bent, 12—19 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to short cylindric, entire, 9—15×7—8 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 15—20×6—8 μ. Ms. thinly scattered and grouped around P., straight, to 280×7—8 μ. apex 2—4-cristate-dentate to 7 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to slightly ellipsoid, obtuse, 4-septate, 34—41×15—17 μ.

On *Odina wodier*, India, Butler 1366, type (DELHI); — On *Lannea welwitschii*, Uganda, Hansford 3563, 2940; — On *L. acidissima*, Gold Coast, Deighton CB 895; — On *Antrocaryon micraster*, Sierra Leone, Deighton 5159; — On *Spondias pinnata*, Java, BO 4941; — On *Lannea* sp., Gold Coast, Hughes in IMI 46778.

The specimens on *Lannea* spp. differ somewhat from the type in the greater dentation of the setae, which have a dense, cristate apex.

(1089) *Meliola weigeltii* Kunze in Weigelt's Exicc. no. 137.

Cols. epiphyllous, very thin, 2—3 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×6—7 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate, or about 5% opposite, spreading or antrorse, straight or bent, 15—23 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with rounded apex, to somewhat ovate, entire, 11—17×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—24×7—9 μ. Ms. thinly scattered, straight, to 350×8—9 μ, apex simple and acute, or often 2—3-dentate to 12 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 33—40×13—14 μ.

On *Astronium* sp., Paraguay, Balansa 3844 (P, det. Gaillard; S. det. Sydow; SPEG 362 det. Spegazzini); Balansa 3791 (SPEG 561); — On *A. fraxinifolium*, Brazil, Da Silva in IMUR 5707; — On *A. graveolens*, Venezuela, Chardon 926, 811, 799, 718 (CUP), with sp. 38—45×16—19 μ; Honduras, Standley 35561 (F);

The present author has been unable to locate type material of this species, and hence is unable to say whether the specimens quoted above correspond with the original.

(1090) *Meliola weigeltii* Kunze var. *fraxinifoliae* Batista, Univ. do Recife, Inst. de Micol., Publ. 25: 10. 1956.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, at wide angles, loosely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate or rarely opposite (mostly on hyphae where mixed with mh.), spreading or antrorse,

straight or slightly bent, 14—18 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to ovoid, entire, 9—13×7—10 μ. Mh. mixed with ch., opposite or alternate. ampulliform, 14—20×6—8 μ. Ms. scattered and grouped around P., straight, to 280×6—7 μ, apex 2—4-dentate to 12 μ. P. scattered, globose, slightly verrucose, to 175 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—38×13—15 μ.

On *Astronium fraxinifolium*, Brazil, IMUR 5064, type.

(1091) *Meliola mangiferae* Earle, Bull. New York Bot. Gard., **3**: 307. 1905.

Cols. amphigenous, dense, velvety, to 3 mm. diam., sometimes confluent. Hyphae substraight to sinnous, cells mostly 20—30×8—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, more or less antrorse, straight or variously bent, sometimes subuncinate, 18—35 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. cylindric to ovate, entire, rounded-angulose or somewhat irregular, often bent, 12—24×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×7—9 μ. Ms. numerous, scattered, straight, to 600×9—11 μ, attenuate to the obtuse, or more commonly 2—3-dentate apex, teeth to 10 μ long. P. scattered, verrucose, to 230 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 48—59×23—27×17—20 μ.

On *Mangifera indica*, Jamaica, Earle 272, type (K); Porto Rico, Heller 6393, Stevens 7109, 5428, 4300, 5558, 6016, 7109, 440, 6574, 9141, 9478, Kevorkian 151, Fink 1055; Trinidad, Baker in IMI 114, 19316; Stevens 835; Panama, Martin 2882, Stevens 1330, 739, 165, 1344, 1212, 223, 1233, 1073, 883, 1247, 765, 507, 109, 915, 729; Costa Rica, Stevens 506; Venezuela, Sydow, Fung. venez. 601, Petrak, Mycoth. gener. 1328, Muller 2365; Surinam, Linder in F; British Guiana, Stevens 366; Brazil, Weir in F, IMUR 5706, 5704; India, Herb. Crypt. Ind. Or. 1050, Thirumalachar 877; Malaya, Baker, Fung. malay. 452, Johnston 524, 928; Amboina Robinson 2118; Java, BO 7369, 12086; Philippines, Sydow, Fung. exot. exs. 250, 376, Krypt. exs. Mus. Vindobon 2818, Philippines, PBS 39240,22968, 25636, 34305, 36452, Stevens 426, 1023, 1144.

On *M. rigida*, Java, BO 14485 p. p.;

On *M.* sp., Java, BO 5915 p. p.

This species would appear to occur on the cultivated mango in most parts of the world where this is grown, with the notable exceptions of Africa and Australia, whence, as far as the writer is aware, no specimens have been recorded.

(1092) *Meliola tapiriricola* Stev. & Tehon, Mycologia **18**:13. 1926.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to somewhat undulate, cells mostly 25—35×4,5—6 μ, branching opposite or irregular, acute, rather closely reticulate. Ch. alternate, antrorse

or spreading, straight or bent, 15—22 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. subglobose, entire, 11—16×9—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—17×6—7 μ. Ms. fairly numerous, scattered, to 250×7—9 μ, apex irregularly cristate-dentate or shortly and irregularly furcate to 15 μ, with numerous, irregular, short teeth to 7 μ long, below the apex often crenulate-torulose for 30 μ or more. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 31—37× 11—13×10—11 μ.

On *Tapirira* sp., British Guiana, Stevens 283, 283, type (FLS).

(1093) *Meliola rhois* P. Henn., Englers Bot. Jahrb. **17**: 523. 1893.

Cols. epiphyllous, dense, velvety, crustose and easily secedent, to 2 mm. diam. Hyphae sinuous to crooked, cells 15—20×7—9 μ, branching alternate or unilateral, acute, closely reticulate and almost solid. Ch. alternate, more or less antrorse-bent, mostly 25—37 μ long; stc. cuneate to cylindric, often bent, 5—14 μ long; hc. very deeply and irregularly stellate-lobate, often bent to uncinate, 13—27×15—22 μ. Mh. not seen. Ms. very numerous, closely scattered and grouped around P., simple, obtuse, to 450×10—12 μ, tapering to 5—7 μ at apex, flexuous to uncinate, or even circinate in upper half. P. in close central group, verrucose, to 320 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 46—53×18—21×15—17 μ.

On *Rhus* sp., Brazil, Sellow s. n., type (S, ex Sydow), Puttemans 153 (SPEG, BRUX).

In both collections this species is mixed with *M. lanigera* Speg.

(1094) *Meliola rhois* P. Henn. var. **lithraeae** Hansf., comb. n.
= *Meliola lithraeae* Hansf., Proc. Linn. Soc. London **165**: 174. 1955.

Cols. epiphyllous, very dense, subcrustose, to 2 mm. diam., velvety. Hyphae undulate, cells mostly 15—25×7—8 μ, branching alternate, acute, very densely reticulate and almost solid. Ch. alternate, more or less antrorse, straight or irregularly bent, 25—35 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. from clavate with truncate apex. to deeply and irregularly lobate, versiform, 15—27×10—22 μ, often much bent. Mh. not seen. Ms. very numerous, simple, obtuse, broadly arcuate to flexuous, subuncinate above, to 360×9—10 μ, attenuate to about 5 μ at apex, thick-walled. P. closely scattered, verrucose, to 280 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 39—46×17—19 μ.

On *Lithraea malleoides*, Brazil, Noack 683, type (S); — On *L. brasiliensis*, Brazil, Theissen in Rehm. Ascomyc. 1899 p. p.; — On *Schinus* sp., Brazil, Rick, Fung. austro-amer. 71 p. p.

This commonly occurs mixed with *M. lanigera* Speg., which has thinner colonies, smaller hyphopodia and smaller spores.

(1095) *Meliola hamata* Syd., Ann. Mycol. **12**: 548. 1914.

Cols. amphigenous, mostly epiphyllous, thin, slightly velvety. Hyphae substraight, cells mostly 30—40×7—9 μ, branching usually opposite at wide angles, closely reticulate. Ch. alternate, spreading, straight or bent, 22—29 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. oblong to ovate, often somewhat attenuate to apex, entire, straight or bent, 13—23×10—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 20—28 μ long. Ms. numerous, scattered, erect, to 450×9—12 μ, apex uncinate, acute. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 45—51×19—22 μ.

On *Buchanania arborescens*, Philippines, PBS 21775 (type), 21806, 25894, 21939, Stevens 239; — On *B. nitida*, Philippines, PBS 23785; — On *B. arborea*, Philippines, PBS 25659; — On *B.* sp., Philippines, PBS 16932, with setae from hamate to straight, apex acute, obtuse, or 2-dentate to 10 μ.

(1096) *Meliola irradians* Gaill., Le Genre *Meliola*, 1892, p. 92.

Cols. hypophyllous, 1 mm. diam., dense, velvety. Hyphae sinuous to crooked, cells mostly 15—25×7—8 μ, branching alternate, acute, rarely opposite, closely reticulate. Ch. alternate, usually more or less bent, antrorse or spreading, 16—28 μ long; stc. cylindric, 5—10 μ long; hc. ovate to irregularly piriform, straight or bent, sometimes uncinate, irregularly rounded-angulose to sublobate, versiform, 11—18×8—14 μ. Mh. few, usually separate in centre of colony, opposite or alternate, ampulliform, 15—22×7—8 μ. Ms. numerous, closely scattered, simple, obtuse, variously bent to twisted or subhamate, to 250×7—9 μ. P. scattered, slightly verrucose, to 180 μ diam., surface cells obtusely rounded to conoid, or slightly mammillate. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—45×12—15 μ.

On *Mauria simplicifolia*, Chile, type (S, ex Montagne).

(1097) *Meliola anacardiacearum* (Stev.) Hansf., Sydowia **9**: 40. 1955.

= *Amazonia anacardiacearum* Stev., Ann. Mycol. **25**: 413. 1927.

Cols. epiphyllous, to 5 mm. diam., thin, sometimes confluent. Hyphae substraight, cells mostly 25—30×7—8 μ, branching usually opposite, acute to wide, loosely interwoven-reticulate. Ch. opposite or alternate, in varying proportions, straight or bent, spreading or antrorse, 15—20 μ long; stc. cylindric, 2—4 μ long; hc. ovate to oblong, straight or bent, entire or less commonly slightly rounded-angulose, 11—15×7—9 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 17—22×7—9 μ. Ms. thinly scattered, straight, simple, obtuse, to 360×7—9 μ. P. scattered, each on a radiate subiculum, globose, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—45×18—20 μ.

On ? *Tapirira* sp., British Guiana, Stevens 277, type, 338 p. p.

Most colonies are parasitised by *Helminthosporium* and *Calloriopsis*, which suppress setae and perithecia.

(1098) *Meliola lanigera* Speg., Anal. Mus. Nac. Buenos Aires, **19**: 327. 1909.

= *Meliola polytricha* K. & C., var. *flexuosiseta* Speg., Rev. Mus. La Plata, 15: 16. 1908.

= *Meliola rhois* P. Henn. var. *flexuosiseta* (Speg.) Hansf., Arq. Inst. Biol. Sao Paulo 12: 242, 1941 and Proc. Linn. Soc. London 165: 176. 1955.

= *Meliola cookeana* Speg. var. *duvauae* Sacc. & Syd., Ann. Mycol. Berlin 2: 170. 1904.

= *Meliola brasiliensis* Speg. var. *sanguineo-maculans* Rehm, Ann. Mycol. Berlin, 5: 336. 1907.

Cols. mostly epiphyllous, to 1 mm. diam., dense, velvety. Hyphae undulate to crooked, branching alternate, acute, densely reticulate, cells mostly 15—20×6—8 μ. Ch. alternate, antrorse, straight or bent, 14—27 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. oblong to ovate, entire or rounded-angulose, often bent or slightly sinuous, 11—18×6—12 μ. Mh. mixed with ch., few, in centre of colony, alternate, ampulliform, 16—22×7—8 μ. Ms. numerous, scattered, broadly arcuate to flexuous in upper half, or sometimes sharply bent in middle, not straight, simple, obtuse, to 400×9 μ. P. in loose central group, verrucose, to 230 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 36—40×15—17 μ.

On *Lithraea brasiliensis*, Argentina, SPEG 531, type; — On *L. caustica*, Chile, Neger in F; — On *L.* sp., Argentina, Molfino in SPEG 1803; — On *Schinus* sp., Sao Paulo, Brazil, Usteri 44 (= SPEG 571, type of *M. polytricha* var. *flexuosiseta*), Puttemans 153 p. p. (SPEG, BRUX); — On *S. terebinthifolius*, Brazil, Ule, Herb. brasil. 2268 (S); — On *S. molle*, Brazil, Rick 152, Krypt. ex. Mus. Vindobon 2211-a; Glaziou 315 (F); — On *S. dependens*, Chile, Neger (type of *M. cookeana* var. *duvauae*); — On *S.* sp., Brazil, Noack 761; Rick, Fung. austr.-amer. 156 (type of *M. brasiliensis* var. *sanguineo-maculans*), Herter s. n., Ule in Rabh.-Wint., Fung. europ. 3850, Rick, Fung. austr.-amer. 134, 71 p. p., 71-a, 142, Rick in Rehm, Ascomyc. 1708 p. p., 1900, Theissen, Decad. fung. brasil. 66, Ule, Herb. brasil. 1023, 1544, Herb. Inst. Biol. Sao Paulo 3312; — On "*Terebinthaceae*" indet., Paraguay. Balansa 4328.

(1099) *Meliola pachychaeta* Syd., Philipp. Journ. Sci., C. Botany, **21**: 134. 1922.

Cols. mostly epiphyllous, dense, velvety, to 5 mm. diam. or confluent. Hyphae substraight to undulate, (sinuous to flexuous in hypophyllous colonies), cells mostly 15—20×6—8 μ, branching usually opposite at wide angles, closely reticulate. Ch. alternate or about 10% opposite, straight or bent, spreading to antrorse, 17—28 μ long;

stc. cylindric, 3—11 μ long; hc. ovate to cylindric, straight or bent, entire or very slightly sinuous at sides, 12—20×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—23×8—9 μ. Ms numerous, straight, simple, acute, to 950×13—15 μ, rigid. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—43×13—16 μ.

On *Semecarpus cassuvium*, Amboina, Robinson 2059 (type), 2246; (S ex Sydow).

(1100) *Meliola nicaraguensis* Speg., Bol. Acad. Nac. Cienc. Cordoba, **26**: 378. 1923.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae substraight, cells mostly 20—30×5—6 μ, branching opposite, acute, loosely reticulate. Ch. mostly opposite, save where crowded, spreading, straight or slightly recurved, 11—17 μ long; stc. cylindric, 2—5 μ long; hc. oblong with rounded apex, entire, 10—14×6—8 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 13—17×6—8 μ. Ms. few, scattered, simple, acute, straight, to 250×7—8 μ. P. not seen. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—37×13—14×11—12 μ.

On *Spondias* sp., Nicaragua, Wright in SPEG 588, type (also K).

(1101) *Meliola buchananiae* Stev. ex Hansf., Sydowia Beih. **1**: 101. 1957.

Cols. amphigenous, dense, velvety, to 5 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 30—50×7—9 μ. Ch. alternate, spreading or subantrorse, straight or bent, 35—48 μ long; stc. cylindric, 9—20 μ long; hc. oblong, often bent to sinuous, usually entire, 22—33×11—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform to conoid, 30—45×8—11 μ. Ms. scattered and grouped around P., straight, simple, acute, to 1800×11—12 μ. P. scattered, verrucose, to 250 μ diam., each on a radiate subiculum. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 63—72×23—28×20—22 μ.

On *Buchanania nitida*, Philippines, PBS 35905 (type), 34642 (FLS).

(1102) *Meliola holigarnae* Stev., Ann. Mycol. Berlin **26**: 260. 1928.

Cols. hypophyllous, to 30 mm. diam., dense, velvety. Haphye crooked, cells mostly 30—40×6—8 μ, branching opposite or irregular, becoming densely reticulate-interwoven, with some straighter hyphae over the top of the cuticular projections of the host, while the remainder penetrate amongst these, and are closely adpressed and strongly adherent. Ch. alternate or unilateral, irregularly spaced, to 60 μ long; stc. sinuous-cylindric, 10—30 μ long; hc. ovate, clavate, or very irregularly lobate, 16—25×10—16 μ, directed downwards between the cuticular projections, and usually remaining on the leaf when the hyphae are detached in film preparations. Mh. scattered, not numerous, conoid to ampulliform, 24—32×8—10 μ. Ms. very numerous,

straight to widely arcuate or flexuous, not uncinate, to 800×9—11 μ, obtuse to subacute, simple. P. scattered, verrucose, to 280 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 58—75× 22—31 μ, the middle cell usually the largest.

On *Holigarna grahamii*, India, Herb. Crypt. Ind. Or. 1981, 1986-a, 1033; — On *H. arnottianum*, India, Thirumalachar 864.

(1103) *Meliola rhois* P. Henn. var. *africana* Hansf., Sydowia **9**: 75. 1955.

Cols. amphigenous, to 3 mm. diam., dense. subcrustose, easily secedent, velvety. Hyphae substraight to sinuous, cells mostly 15—20 ×6—8 μ, branching usually alternate, acute, closely reticulate-radiating and becoming almost solid. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. very irregularly lobate, versiform, from elongate-clavate to broader than long straight or variously bent, 12—21×12—18 μ, usually slightly darker than the mycelium. Mh. separate, opposite or alternate, ampulliform, straight or bent, 18—24×6—9 μ. Ms. numerous, scattered, simple, straight, acute, to 450×8—10 μ. P. in central group or scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 39—50×17—21 μ.

On *Rhus glaucescens*, Uganda, Hansford 1254, 1438. 1750, 2024, 2080, 2298, 2499, 2608, 2818, 3081, 3082. 3083, 3084, 3451, 3360, 3486, 3470; Congo Belge, Hendrickx 2665; — On *Proporhus longifolia*, South Africa, Talbot in IMI 24960; — On *Schinus dependens*, Brazil, Rick 150 p. p. ,16, Herter 1435; — On *S. molle*, Brazil, Rick, Fung. austr.-amer. 134, Rick 199 (F), Argentina, SPEG 630, 628 p. p., B 450; Paraguay, Balansa 2800 (SPEG).

(1104) *Meliola nothopegiae* Hansf., Sydowia **10**: 80. 1957

Cols. amphigenous, mostly hypophyllous, to 5 mm. diam., dense. Hyphae crooked to sinuous, cells mostly 20—30×9—10 μ, branching opposite or irregular at wide angles, densely interwoven-reticulate. Ch. alternate, usually bent, 25—35 μ long; speading or subantrorse; stc. cylindric, 4—10 μ long; hc. rarely oblong and entire, usually irregularly crenulate to sublobate, versiform, often bent. 18—26× 9—15 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 20—27×8—10 μ. Ms. scattered, straight, simple, acute. to 800×10—11 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 45—50×20—22× 17—19 μ.

On *Nothopegia colebrookiana*, India, Herb. Crypt. Ind. Or. 1970 (= IMI 18936).

(1105) *Meliola melanochylae* Hansf., Reinwardtia **3**: 76. 1954.

Cols. epiphyllous, subdense, to 4 mm. diam., or numerous and confluent, subvelvety. Hyphae substraight, cells mostly 15—20× 6—7 μ, branching usually opposite, subrectangular, loosely to closely

reticulate. Ch. alternate or less than 1% opposite, spreading or slightly antrorse, straight or slightly bent, 13—20 μ long; stc. cylindric, 2—7 μ long; hc. ovate to sinuous-cylindric with rounded apex, entire, 9—15×7—9 μ. Mh. mixed with ch., opposite or alternate, narrow conoid-amupilliform, 20—25×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 470×7—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. widely ellipsoid, obtuse, 4-septate, rather strongly constricted, 37—45×18—21×13—15 μ.

On *Melanochyla tomentosa*, Java, BO 13012, type.

(1106) *Meliola chilensis* Speg., Bol. Acad. Cienc. Argentina **25**:41. 1921.

Cols. amphigenous, to 3 mm. diam., dense. subvelvety. Hyphae crooked, branching alternate or irregular, acute, closely radiating-reticulate, cells mostly 20—25×7—9 μ. Ch. alternate, subantrorse, straight or bent, 22—28 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. cylindric-clavate and entire. straight or bent, or sometimes irregularly rounded-angulose to sublobate, 15—21×9—15 μ. Mh. few, separate in centre of colony, opposite or alternate, ampulliform. Ms. fairly numerous, straight or slightly flexuous, simple, obtuse, to 450×8—9 μ. P. in central loose group, verrucose, to 330 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—49×17—20 μ.

On *Schinus latifolius* var. *tomentosus*, Chile, Werdermann 1735 (F); — On *S. latifolius*, Chile, SPEG 604, type.

(1107) *Meliola semecarpicola* Hansf., Sydowia 11: 58. 1958

Cols. epiphyllous, thin, slightly velvety, to 8 mm. diam., causing an indefinite leafspot showing through on the lower surface. Hyphae straight, branching opposite, acute, loosely radiating-reticulate, cells mostly 20—35×6—7 μ. Ch. alternate, subantrorse, straight or slightly bent, 22—35 μ long; stc. cuneate, 4—12 μ long; hc. ovate, entire, 16—23×10—14 μ. Mh. mostly separate, opposite or alternate, ampulliform, 18—25×7—10 μ. Ms. scattered and grouped around P., straight, simple, acute, to 750×8—9 μ. P. scattered, verrucose, to 120 μ diam. (immature). Sp. oblong, obtuse, 4-septate, constricted, 40—48×16—18 μ.

On *Semecarpus* sp., Philippines, Stevens 1921, type (FLS).

(1108) *Meliola rhoina* Doidge, Bothalia 2: 454. 1928.

= *Meliola rhois* P. Henn. var. *minor* Hansf., Journ. Linn. Soc. London **51**: 281. 1937

Cols. amphigenous, to 3 mm. diam., thin to subdense, thinly velvety. Hyphae more or less undulate, cells mostly 17—30×7—8 μ, branching alternate or irregular, not opposite, acute, loosely to densely reticulate. Ch. alternate, straight or bent, more or less antrorse, 18—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate, cylindric, or often rounded-angulose to sublobate, straight or bent, 10—18×6—12 μ. Mh. mostly separate, often a few mixed with ch.,

opposite or alternate, ampulliform, 15—22×6—9 μ. Ms. numerous, scattered, straight, simple, acute, to 400×7—9 μ, usually not over 280 μ long. P. scattered or in a loose central group, verrucose, to 240 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, slightly constricted, 33—45×14—18 μ.

On *Rhus crenata*, South Africa, PRET 6804, 9032; — On *R guienzii*, South Africa, PRET 12428; — On *R. longispina*, South Africa, PRET 1239, 12348, 12360, 14216, 14217; — On *R. refracta*, South Africa, PRET 12371, 14220, 17250; — On *R. villosa*, South Africa, PRET 2519, 11590, 11892; — On *R. glaucescens*, Uganda, Hansford 1254-b, 1750, 2133, 3451, 3360, 3470; Congo Belge, Hendrickx 2665 p. p.; — On *Schinus dependens*, Brazil, Rick 150 p. p., Rick, Fung. austr.-amer. 71, p. p.; — On *S. molle*, Brazil, Herter in F, p. p.; — On *Schinus* sp., Paraguay, Balansa 2800 p. p. — On *S. polygamus*, Argentina, Hirschorn in SPEG 4752.

(1109) *Meliola rhoina* Doidge var. *schini* Hansf., Sydowia **10**: 87. 1957.

Cols. mostly epiphyllous, dense, to 1,5 mm. diam. Hyphae undulate, cells mostly 15—25×7—9 μ, branching alternate or irregular, acute, closely reticulate-interwoven and becoming almost solid. Ch. alternate, more or less antrorse, straight or bent, 16—24 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. ovate, cylindric, clavate or piriform, entire or very slightly rounded-angulose, often bent, 11—17×8—12 μ. Mh. separate, on few short hyphae in centre, alternate or unilateral, ampulliform, 16—22×7—9 μ. Ms. scattered and grouped around P., straight or slightly bent, simple, obtuse and paler at apex (? immature), to 250×7—9 μ. P. in central group. verrucose, to 270 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—50× 18—20×16 μ.

On *Schinus latifolius*, Argentina, SPEG 623, type; — On *S.* sp., Argentina, SPEG 628 p. p., 631.

(1110) *Meliola loxostylidis* Doidge, Trans. Roy. Soc. South Africa **7**: 114. 1920.

Cols. hypophyllous, to 4 mm. diam., subdense. Hyphae tortuous, cells 15—40 μ long, 5—9 μ thick, often subtorulose, branching alternate or irregular, acute, rarely opposite, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or irregularly bent, 20—30 μ long; stc. cylindric to cuneate, often bent, entire or usually rounded-angulose to sublobate, rounded or truncate at apex, 14—20×10—17 μ. Mh. rather few, mixed with ch., alternate or unilateral, ampulliform, 13—17×6—7 μ. Ms. not numerous, scattered, straight, simple, obtuse to subacute, to 240×6—9 μ. P. scattered, verrucose, to 240 μ diam., surface cells rounded to obtusely conoid. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 37—47×17—20 μ.

On *Loxostylis alata*, South Africa, PRET 8376, 10921, 10970.

(1111) *Meliola semecarpi* Syd., Ann. Mycol. 21: 95. 1923.

Cols. hypophyllous, thin, to 10 mm. diam. or widely confluent. Hyphae substraight to flexuous, cells mostly 30—60×7—8 μ, branching opposite or irregular, loosely interwoven-reticulate above the tomentum of the host leaf. Ch. alternate or more scattered, mostly 30—50 μ long; stc. descending through the leaf tomentum, cylindric, bent, 10—40 μ or more long; hc. subglobose, ovate, piriform or shallowly rounded-angulose, 14—22×15—20 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—28×6—9 μ, neck elongate. Ms. fairly numerous, scattered, simple obtuse, straight or flexuous, not uncinate, to 600×6—8 μ, attenuate gradually to 3—4 μ at apex. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid. obtuse, 4-septate, slightly constricted, 44—49×17—20 μ.

On *Semecarpus* sp., Philippines. PBS 8753, type (S), 34671, 34295 (FLS).

Host Family 206. Connaraceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3141.4221	Cols. dense, velvety; hyphae crooked-geniculate; hc. globose-cylindric, entire; ms. 1—2-dichotomous to 50 μ	*agelaeicola*	(1112)
3133.3222	Cols. thin to subdense, thinly velvety; hyphae substraight; hc. subglobose, entire; ms. cristate-dentate to 10 μ	*manotis*	(1113)
3131.4224	Cols. thin; hyphae sinuous to flexuous; hc. cylindric-clavate, entire; ms. acute or 2—4-dentate to 15 μ	*mabirensis*	(1114)
3113.4323	Cols. dense; hyphae substraight; hc. cylindric, entire; ms. obtuse to acute	*connaricola*	(1115)
3112.4222	Cols. dense to crustose; hc. cylindric to ovate, entire or angulose; ms. acute	*agelaeae*	(1116)
3113.4223	Cols. thin, parasitic; hc. cylindric to ovate; ms. acute	*agelaeae* var. *africana*	(1117)
3111.6322	Cols. dense, velvety; hc. cylindric-clavate; ms. acute	*roureae* var. *domingensis*	(1118)
3111.5323	Cols. dense, velvety; hc. cylindric to clavate, entire; ms. acute	*roureae* var. *major*	(1119)
3111.5223	Cols. thin; hc. smaller, cylindric to piriform, entire; ms. acute	*roureae* var. *santaloidis*	(1120)
3111.5323	Cols. thin, subvelvety; hc. cylindric to clavate, entire or sublobate; ms. acute	*connari*	(1121)
3111.5323	Cols. dense, crustose; hyphae undulate; hc. oblong-piriform or angulose; ms. acute	*connari* var. *panamensis*	(1122)

3111.4222 Cols. dense; hc. cylindric to sublobate; ms. acute ..... *cnestidis* (1123)

3111.4224 Cols. thin, subvelvety; hc. clavate-cylindric, entire; ms. acute ..... *roureae* (1124)

(1112) *Meliola agelaeicola* Hansf., Proc. Linn. Soc. London **157**: 174. 1946.

Cols. hypophyllous, subdense, velvety, to 6 mm. diam. Hyphae sinuous to crooked, often sharply geniculate, cells 20—30×7—9 μ, branching irregular, acute, closely interwoven-reticulate. Ch. alternate, 20—35 μ long, straight or bent, spreading or antrorse; stc. cylindric, 3—7 μ long; hc. versiform, subglobose, ovate, cylindric or irregularly triangular, straight or bent, entire, rounded or truncate above, 18—28×10—16 μ. Mh. mixed with ch., usually alternate, ampulliform. Ms. numerous, scattered, to 270×10—12 μ, straight below, apex 1—2-dichotomous or 3-furcate to 50 μ, 2-ry branches to 20 μ, ultimate branches 2—4-dentate, widely divergent, sometimes the branches short and the setae cristate. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 45—49×16—18 μ.

On *Agelaea ugandensis*, Uganda, Hansford 2979 (type), 3044.

(1113) *Meliola manotis* Hansf. & Deight., Mycol. Paper, IMI, **23**: 47. 1948.

Cols. epiphyllous, thin to subdense. thinly velvety, to 4 mm. diam. Hyphae substraight, branching opposite at wide angeles. loosly to closely reticulate, cells mostly 12—20×6—7 μ. Ch. opposite or alternate, spreading or slightly antrorse, usually straight, 11—17 μ long; src. cylindric, 2—5 μ long; hc. subglobose to widely clavate, entire, 9—12×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×6—8 μ, neck elongate. Ms. scattered, straight, to 480×7—9 μ, apex cristate with 2—5 teeth, to 10 μ long. P. loosely scattered, verrucose. to 160 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 34—39×13—15 μ.

On *Manotes longiflora*, Sierra Leone, Deighton 1575, type; 1584, 2260.

(1114) *Meliola mabirensis* Hansf., Proc. Linn. Soc. London, **157**: 177. 1946.

Cols. amphigenous, thin, to 5 mm. diam. or confluent. Hyphae sinuous to crooked, geniculate on lower surface, branching opposite or irregular, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate or more scattered, spreading, straight or bent, 22—35 μ long; stc. cylindric, 4—15 μ long; hc. cylindric to clavate, entire, rounded at apex, often bent, 17—25×7—11 μ. Mh. mixed with ch., mostly alternate, conoid to ampulliform, 20—28×8—10 μ. Ms. thinly scattered and grouped around P.. straight, to 1000×7—12 μ, apex rarely simple and acute, usually 2—4-dentate to 15 μ. P. loosely

scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—49×16—19×13—15 μ.

On *Agelaea ugandensis*, Uganda, Hansford 3046 (type), 3379; — On *A. trifolia*, Sierra Leone, Deighton 1679, 617; — On *A.* sp., Sierra Leone, Deighton 1775; — On *Connarus africanus*, Sierra Leone, Deighton 616.

(1115) *Meliola connaricola* Hansf., Sydowia **9**: 40. 1955.

Cols. mostly epiphyllous, dense, thinly velvety, to 3 mm. diam. Hyphae substraight, branching close, usually opposite at wide angles, densely reticulate and almost solid, cells mostly 10—15×7—9 μ. Ch. mostly opposite, slightly antrorse, straight or bent, 18—25 μ long; stc. cylindric, 3—7 μ long; hc. cylindric with rounded or slightly attenuate apex, entire, 13—19×7—10 μ. Mh. few, mixed with ch., opposite or alternate, bent ampulliform, 20—25×8—9 μ. Ms. thinly scattered, straight, simple, obtuse to acute, up to 800×10—12 μ. P. closely scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, 40—48×18—21×15—16 μ.

On *Connarus neurocalyx*, Philippines, Krypt. exs. Mus. Hist. Nat. Vindobon, 3424 (K); — On *C.* sp., Philippines, PBS 36180 (FLS).

(1116) *Meliola agelaeae* Stev. & Rold., Philipp. Journ. Sci. **56**: 64. 1935.

Cols. amphigenous, to 8 mm. diam., dense to crustose. Hyphae straight, branching opposite at wide angles, densely reticulate and almost solid, cells mostly 12—20×6—7 μ. Ch. closely crowded, opposite, slightly antrorse, straight or slightly bent, 13—18 μ long; stc. cylindric, 3—4 μ long; hc. cylindric or slightly conoid. apex rounded or attenuate, rarely truncate, straight or slightly bent, 10—15×6—10 μ. Mh. rather few, mixed with ch., opposite or alternate, ampulliform, 20—25×7—9 μ. Ms. scattered, straight, simple, acute, to 370×10—11 μ. P. scattered, verrucose to almost smooth, to 180 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 37—47×17—19×13—16 μ.

On *Agelaea* sp., Philippines, Stevens 439, type (CUP); — On *A. javanica*, Java, BO 10993; — On *Jaundea monticola*, Uganda, Hansford 2840.

(1117) *Meliola agelaeae* Stev. & Rold. var. **africana** Hansf., nom. n. *Meliola agelaeae* Hansf., Journ. Linn. Soc. London, **51**:538. 1938.

Cols. epiphyllous, thin, strongly parasitic and discoloring the host leaf, thinly setose, to 3 mm. diam. Hyphae substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 20—35×6—7 μ. Ch. opposite or alternate in varying proportions, distant, somewhat antrorse, straight, or often slightly recurved above, 17—20 μ long; stc. cylindric, 3—6 μ long; hc. cylindric, rounded or very slightly attenuate at apex, straight or slightly bent, entire, 11—16×7—9 μ. Mh. few. mixed with ch., alternate or opposite, ampulliform, 18—23×

7—8 μ. Ms. few to numerous, scattered and grouped around P., to 700×8—11 μ, simple, acute, straight. P. scattered, verrucose, to 200 μ diam. Sp. cylindric, obtuse, rather strongly constricted, 4-septate, 40—46×15—17 μ.

On *Agelaea ugandensis*, Uganda, Hansford 2275 (type), 2292, 2507, 3153, 3270.

(1118) *Meliola roureae* Syd. var. *domingensis* Hansf., Sydowia 9: 47. 1955.

Cols. mostly hypophyllous, dense, velvety, to 4 mm. diam., strongly parasitic and causing a brown leafspot on opposite side of leaf. Hyphae crooked, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—30×7—10 μ. Ch. alternate, usually much bent, 24—30 μ long, antrorse or spreading; stc. cylindric, 4—8 μ long; hc. cylindric to clavate, entire, widely rounded at apex, straight or bent, 17—23×9—13 μ. Mh. mixed with ch., alternate, ampulliform, 23—29×8—10 μ. Ms. numerous, scattered, straight, simple, acute, to 480×9—11 μ. Sp. cylindric to slightly ellipsoid, 4-septate, constricted, obtuse at ends, 55—65×20—22×17—19 μ.

On *Rourea surinamensis*, SanDomingo, Ciferri, Mycofl. doming. exs. 32, type (K).

In Mycopathologia 7: 80, 1954, Ciferri reports the specimens Ekman 3158, 2871 on the same host from San Domingo, as *Meliola roureae;* these probably belong to the variety above, though I have not had specimens available for examination.

(1119) *Meliola roureae* Syd. var. *major* Hansf. & Deight., Mycol. Paper, IMI, **23**:48. 1948.

Cols. amphigenous, rather dense, velvety, to 4 mm. diam. Hyphae straight or slightly flexuous, branching opposite at wide angles, densely reticulate in centre, cells mostly 20—30×8 μ. Ch. alternate, spreading, straight or bent, 22—28 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. cylindric, clavate or subglobose, entire, straight or slightly bent, 14—23×10—14 μ. Mh. mixed with ch., opposite or mostly alternate, ampulliform, 16—22×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 900×10—12 μ. P. scattered, each on loosely radiate subiculum, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 46—53×19—22 μ.

On *Connarus africanus*, Sierra Leone, Deighton 1574, type.

(1120) *Meliola roureae* Syd. var. *santaloidis* Deight., Sydowia 11: 111. 1958.

Cols. epiphyllous, thin, to 5 mm. diam. Hyphae substraight to slightly sinuous, branching opposite at wide angles, loosely interwoven-erticulate, cells mostly 25—50×7—8 μ. Ch. alternate or less than 1% opposite, more or less bent, subantrorse, 18—26 μ long; stc. cylindicr, 4—9 μ long; hc. cylindric to piriform, entire, usually bent, widely rounded at apex, 13—18×8—12 μ. Mh. mixed with ch., alternate,

ampulliform, 15—28×6—10 μ. Ms. mostly grouped around P., straight, simple, acute, to 650×10 μ. P. scattered, verrucose, to 200 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 44—51× 18—20 μ.

On *Santaloides afzelii*, Sierra Leone, Deighton 2468, type. (IMI 5406).

(1121) *Meliola connari* Yates, Philipp. Journ. Sci., C, Botany, 12:364. 1917 (as *M. connariae*).

Cols. amphigenous, to 20 mm. diam., velvety, often widely confluent. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate, cells mostly 25—45×8—10 μ. Ch. alternate or more scattered, spreading, antrorse or recurved, straight or bent, 28—33 μ long; stc. cylindric, 5—10 μ long; hc. subglobose to clavate, entire or rounded-angulose to sublobate, 18—25×10—16 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, 25—30× 8—10 μ, neck elongate. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 900×11—12 μ. P. scattered, each on loosely radiate subiculum of ex-hyphopodiate hyphae, verrucose, to 180 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 48—55×20—25 μ.

On *Connarus* sp., Philippines, PBS 25622, type.

(1122) *Meliola connari* Yates var. *panamensis* Hansf. Sydowia Beih. 1:105. 1957.

Cols. epiphyllous, very dense and subcrustose, to 3 mm. diam., less commonly hypophyllous and velvety. Haphae undulate, branching opposite or irregular, acute, very densely reticulate, cells mostly 15—25×7—10 μ. Ch. alternate or about 1% opposite, subantrorse, straight or slightly bent, 21—27 μ long; stc. cuneate to cylindric, 6—8 μ long; hc. oblong to piriform, entire or slightly rounded-angulose, 14—20× 11—14 μ. Mh. few, mixed with ch., alternate, ampulliform, 23—33× 9—10 μ. Ms. scattered or few-aggregate around P., straight, simple, acute, to 660×10—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 50—55×21—23 μ.

On *Connarus panamensis*, Panama, Stevens 1143, type (FLS, F).

(1123) *Meliola cnestidis* Doidge, Bothalia 2:453. 1928.

Cols. amphigenous, subdense, to 5 mm. diam. Hyphae undulate to crooked, branching usually opposite at wide angles, closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or unilateral, very rarely opposite (less than 1%), 18—30 μ long, speading, straight or bent; stc. cylindric to cuneate. 5—17 μ long, sometimes 1-septate; hc. clavate to cylindric, often bent, usually entire, 12—20×6—16 μ. Mh. mixed with ch., opposite or mostly alternate, ampulliform, 16—20×6—7 μ. scattered and grouped around P., straight, simple, acute, to 350×7—8 μ. P. scattered, verrucose, to 200 μ diam. Sp.

oblong to cylindric, obtuse, 4-septate, slightly constricted, 42—47× 15—17 μ.

On *Cnestis natalensis*, South Africa, PRET 9076, 9527, 9035; Pegler 2310 (K).

(1124) *Meliola roureae* Syd., Ann. Mycol. **15**: 191. 1917.
= *Meliola roureae* Yates, Philipp. Journ. Sci., C, Botany, **13**: 370. 1918.

Cols. amphigenous, rather thin, slightly velvety, more or less widely effuse over leaf. Hyphae substraight, branching opposite or irregular, acute, loosely reticulate, cells mostly 30—40×7—9 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 23—30 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. cylindric to clavate, entire, often slightly bent, 14—20×10—17 μ. Mh. rare, mixed with ch., alternate, ampulliform to conoid, 20—26×8—10 μ. Ms. closely scattered and grouped around P., straight, simple, acute, to 1000× 11—13 μ. P. scattered, each on radiate subiculum and surrounded by long ms., with others only to 400 μ long and obtuse, verrucose, to 180 μ diam. Sp. cylindric to slightly ellipsoid, 4-septate, constricted, 40—48×18—20 μ.

On *Rourea erecta*, Philippines, PBS 23926 (type), 23994, 27724, 24010, 27760; Baker in PBS 3034-a (S, det Rehm as *M. laxa*).

Host Family 207. Juglandaceae.

(1125) **Appendiculella engelhardtiae** (Yamam.) Hansf., comb. n.
= *Irene engelhardtiae* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 14. 1941.

Cols. mostly epiphyllous, thin, arachnoid, to 9 mm. diam. Hyphae undulate, cells 16—28×5—7 μ, branching mostly opposite, loosely reticulate. Ch. alternate or opposite; stc. 3—6 μ long; hc. ovate, straight or slightly bent, attenuate-rounded at apex, entire, 10—13× 7—8 μ. Mh. few, mixed with ch., alternate, rarely opposite, ampulliform, 16—25×6—8 μ. P. scattered, each on radiate subiculum, to 240 μ diam.; app. numerous, corniform, slightly bent, 18—30 μ long, obtuse. Sp. cylindric to subellipsoid, obtuse 4-septate slightly constricted 42—57×14—23 μ. (Descr. after Yamamoto l. c.)

On *Engelhardtia chrysolepis* Formosa Yamamoto.

Specimens of this species have not become available to the present author.

Host Family 209. Cornaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.5330 Cols. subdense; hyphae undulate to crooked; hc. large, angulose to sublobate; P-cells to 25 μ high ..... *aucubae* (1126)

2111.5232 Cols. dense, velvety; hyphae crooked; hc. subglobose to angulose or sublobate; ms. obtuse ..... *nidulans* (1127)

2111.4232 Cols. subdense, velvety; hyphae substraight; hc. 3—5-lobate; ms. acute ..... *ganglifera* (1128)

(1126) **Asteridiella aucubae** (P. Henn.) Hansf. comb. n.
= *Meliola aucubae* P. Henn. Engl. Bot. Jahrb. **29**:150. 1901. — = *Irenina aucubae* (P. Henn.) Stev. Ann. Mycol. **25**: 455. 1927. — = *Irene aucubae* (P. Henn.) Hansf. Sydowia **9**: 2. 1955.

Cols. hypophyllous rather dense 2—4 mm. diam. Hyphae sinuous to crooked branching usually opposite at wide angles loosely to rather closely reticulate cells mostly 25—35×7—9 μ. Ch. alternate or unilateral often more scattered and then in groups of 3—4 separated by cells devoid of hyphopodia usually antrorse-bent 25—35 μ long; stc. cylindric to cuneate 7—13 μ long; hc. irregularly rounded-angulose to shallowly lobate 18—26×17—22 μ. Mh. mixed with ch. opposite or alternate ampulliform 13—22×7—10 μ. P. scattered rough to 270 μ diam. surface cells bent conoid projecting up to 25 μ about 40—50 μ diam. at base. Sp. cylindric obtuse 4-septate. constricted. 45—51×18—21×14—16 μ.

On *Aucuba japonica*. Japan, Shirai s. n., type (S).

(1127) *Meliola nidulans* (Schw.) Cooke, Grevillea **11**: 37. 1882.
= *Sphaeria nidulans* Schw., Synops. Fung. Carol. 45: no. 185. 1822.

Cols. caulicolous, dense, velvety, to 50 mm. long. Hyphae crooked, branching alternate, unilateral or irregular, very densely reticulate and becoming solid, cells mostly 12—20×6—10 μ. Ch. alternate, closely crowded, straight or bent, spreading or antrorse, 13—24 μ long; stc. cylindric to cuneate, 2—12 μ long; hc. subglobose to irregularly angulose or sublobate, versiform, 11—17×10—20 μ. Mh. not seen. Ms. very numerous, scattered closely, straight, simple, obtuse, to 500×10—12 μ. P. closely scattered, verrucose, to 240 μ diam. Sp. subellipsoid, obtuse, 3-septate, constricted, 50—60×15—19 μ.

On *Cornus* sp., U.S.A., Schweinitz, type; Demetrio in Rabh.-Wint.-Pazschke, Fung. europ. 3544; Atkinson s. n. (S ex Rehm); Underwood & Earle in FLS 5600; — On *C. sericeus*, U.S.A., Langlois 108; — On *C. amomum*, U.S.A., Sharp 7837 (F).

There has been much confusion in the past between this species and *M. niessleana* Wint.; the present species is limited to *Cornus* and appears not to have been collected outside U.S.A.; *M. niessleana* occurs on *Ericaceae* and *Vacciniaceae* in both Europe and America.

(1128) *Meliola ganglifera* Kalchbr. & Cooke, Grevillea **9**: 34. 1880.

Cols. amphigenous, thin to dense, velvety, to 20 mm. diam. Hyphae substraight or slightly sinuous, branching opposite at wide angles. loosely to closely reticulate, cells mostly 20—40×6—7 μ. Ch. alternate, spreading or antrorse, straight or bent, 27—36 μ long; stc. cylindric to cuneate, to 15 μ long; hc. irregularly and deeply 3—5-lobate. versiform, 16—28×15—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—21×7—9 μ. Ms. numerous, scattered, simple, straight, acute, to 360×8 μ. P. scattered, verrucose, to 250 μ diam. Sp. cylindric to subellipsoid, straight or bent, obtuse, 3-septate, constricted, 45—50×15—18 μ.

On *Curtisea faginea*, South Africa, PRET 134, 9063, 9160, 9457, 11852, 11601, 11609, 10933, 12292, 12380, 17180, 17213; Macowan 1349, type (K).

Host Family 210. Alangiaceae.

(1129) *Meliola alangii* Syd., Ann. Mycol. **14**: 355. 1916.

Cols. amphigenous. to 2 mm. diam., rather thin. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate, cell mostly 20—30×5—6 μ. Ch. alternate, spreading or antrorse, straight or bent, 14—18 μ long; stc. cylindric, 4—7 μ long; hc. ovate to clavate, entire, 8—14×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. few to numerous, scattered, straight, simple. obtuse, to 600×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 30—37×11—14 μ.

On *Alangium begoniifolium*, Philippines, Baker in PBS 4019, type; Baker in PBS 4052, 1952 (S); Baker, Fung. Malay. 247; — On *A. chinensis*, Philippines, Stevens 643, 701 (FLS);

Host Family 212. Araliaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

3203.4330 Cols. dense; hyphae substraight; hc. piriform to irregular and sublobate; spp. 4—8, pale,

3203.4330 Cols. dense; hyphae substraight; hc. piriform to irregular and sublobate; spp. 4—8, pale, obtuse, to 90×23 μ..... *araliae* (1130)

Asteridiella

3101.6240 Cols. dense, crustose; hyphae substraight to crooked; hc. angulose; sp. narrow ..... *cheirodendronis* (1131)

3101.5340 Cols. dense; hyphae substraight; hc. subglobose to piriform, entire; sp. subellipsoid .. *morototoni* (1132)

3102.5320 Cols. subcrustose; hyphae substraight; hc. globose to oblong; sp. ellipsoid ..... *boedijnii* (1133)

Meliola

3143.5331	Cols. thin to dense; hyphae substraight; hc. ovate-oblong, entire; ms. 3—4-dichotomous, apices obtuse to acute	*heteroseta*	(1134)
3143.4221	Cols. thin, subvelvety; hyphae substraight to undulate; hc. subglobose-piriform, entire; ms. 1—3-dichotomous, tips acute; sp. narrower	*boerlagiodendri*	(1135)
3143.4231	Cols. dense, velvety; hyphae substraight; hc. ovate-piriform, entire; ms. 1—2-dichotomous, tips obtuse	*dichotoma*	(1136)
31¼3.4231	Cols. dense, subvelvety; hyphae substraight; hc. ovate-clavate, entire; ms. acute, obtuse or 1—2-dichotomous	*dichotoma* var. *kusanoi*	(1137)
3123.4221	Cols. dense, subvelvety; hyphae substraight; hc. globose-piriform, entire; ms. arcuate to uncinate, obtuse	*didymopanacis*	(1138)
3121.4221	Cols. minute; hyphae undulate; hc. piriform. entire; ms. arcuate to flexuous, obtuse	*didymopanacis* var. *polysciatis*	(1139)
31½3.3221	Cols. dense, velvety; hyphae substraight; hc. ovate, entire; ms. obtuse, straight to uncinate	*didymopanacis* var. *domingensis*	(1140)
3113.5221	Cols. dense, subvelvety; hyphae straight to sinuous; hc. globose-piriform, entire; ms. acute, straight	*schefflerae*	(1142)
3113.4234	Cols. subdense, velvety; hyphae substraight; hc. subglobose-piriform, entire; ms. straight, acute	*didymopanacis* var. *stevensii*	(1141)
3113.4221	Cols. dense; hyphae substraight; hc. ovate to cylindric, entire; ms. straight, obtuse	*irosinensis*	(1143)
3112.6331	Cols. dense; hyphae substraight; hc. subglobose-piriform, entire or angulose; ms. acute	*pectinata*	(1144)
3113.5233	Cols. dense, subvelvety; hyphae substraight; hc. subglobose to ellipsoid, entire; ms. straight, acute	*acanthopanacis*	(1145)
3111.4233	Cols. subdense, subvelvety; hyphae substraight; hc. subglobose; ms. straight, acute	*araliicola*	(1146)

(1130) **Appendiculella araliae** (Spreng.) Hansf., comb. n.

= *Amphitrichum araliae* Spreng., Svenska Vet. Ak. Handl. 52. 1820.

= *Sphaeria amphitricha* var. B., *araliae* Fr., Syst. Myc. 2: 514. 1823.

= *Meliola araliae* (Spreng.) Mont. in Sarga, Hist. Cuba, p. 327. 1838.

= *Meliola amphitricha* Fr. var. *araliae-arboreae* Bornet, Ann. Sci. Nat. Bot., III: **16**: 257. 1851.

= *Irene araliae* (Spreng.) Stev., Ann. Mycol. **25**: 425. 1927.

Cols. hypophyllous, dense. smooth, to 3 mm. diam. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 20—30×7—9 μ. Ch. alternate or to about 5% opposite, spreading or subantrorse, straight or bent, 20—32 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. rarely piriform and entire. usually angulose to subolate, straight or bent, versiform, 12—22×12—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. scattered, verrucose, to 230 μ diam., surface cells obtusely conoid; app. 4—8, cylindric, pale translucent brown, thin-walled, continuous, smooth or indistinctly dark-granulose, indistinctly transversely striate, apex darker and obtuse, more or less bent, to 90×18—23 μ. Sp. wide ellipsoid, obtuse, 4-septate, constricted, 38—48×18—22 μ.

On *Aralia* sp., Porto Rico, Sprengel's type in S; — On *Araliaceae* indet., British Guiana, Stevens 219 (FLS); this has sp. 39—46× 15—17 μ.

(1131) **Asteridiella cheirodendronis** (Stev.) Hansf., comb. n.

= *Meliola cheirodendronis* Stev., Bull. Bishop Mus., Honolulu, **19**: 44. 1925.

= *Irenina cheirodendronis* (Stev.) Stev., Ann. Mycol. **25**: 466. 1927.

Cols. hypophyllous, dense, smooth, to 2 mm. diam. Hyphae substraight to flexuous, branching alternate or irregular, not opposite, acute, densely radiating-reticulate and nearly solid, cells mostly 12—25×6—7 μ. Ch. alternate, unilateral or more scattered, antrorse, straight or bent, 17—28 μ long; stc. cylindric, 3—14 μ long, straight or bent; hc. subglobose to elongate, usually with sinuous, crenulate, slightly angulose or sublobate margin, rounded or truncate at apex, 11—18×7—11 μ. Mh. not seen. P. in central group, verrucose, to 420 μ diam., smooth to verrucose. Sp. narrowly subellipsoid, obtuse, 4-septate, slightly constricted, often slightly bent, 52—61×14—16 μ.

On *Cheirodendron gaudichaudii*, Hawaii, Stevens 1165, type, 641 (FLS).

(1132) *Asteridiella morototoni* (Speg.) Hansf., Sydowia **10**: 49. 1957.

(3101.5340)

= *Meliola morototoni* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 360. 1924.

= *Irenina morototoni* (Speg.) Stev., Ann. Mycol. **25**: 468. 1927.

Cols. epiphyllous, to 2 mm. diam. each ona sharply defined yellow leafspot, not showing through the leaf on lower surface, dense, smooth. Hyphae substraight, branching opposite, acute to wide, closely radiating-reticulate, cells 25—30×7—8 μ. Ch. alternate, antrorse,

straight or slightly bent, 20—27 μ long; stc. cuneate, 4—8 μ long; hc. subglobose to wide piriform, entire, 15—20×11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. P. in central group, globose, verrucose, to 250 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 45—52×20—22×15—16 μ.

On *Didymopanax morototoni*, Argentina, SPEG 1812, type.

(1133) *Asteridiella boedijnii* (Cif.) Hansf., Sydowia 10:47. 1957.
= *Meliola boedijnii* Ciferri, Mycopathologia 6: 21. 1951.

Cols. crustose or subcrustose, scattered or rarely aggregate, not confluent, to 1,5 mm. diam., epiphyllous. Hyphae straight or slightly flexuous, 10—12 μ thick, branching opposite, Ch. opposite, rarely alternate or unilateral, irregularly scattered, often very dense, 18—29 μ long; stc. 3—6 μ long; hc. globose to oblong, rarely ellipsoid, straight or bent, 14—18 μ diam. or 16—22×12—16 μ. Mh. not seen. Setae none. P. few, scattered, globose, to 150 μ diam. Sp. ellipsoid to ovoid, rately cylindric, obtuse, 4-septate, slightly constricted, 40—50×18—22 rarely cylindric, obtuse, 4-septate, slightly constricted, 40—50× 18—22 μ.

On *Schefflera aromatica*, Java, Boedijn 767 (BO 11740, type).

In the Herb. Bogor portion of this collection I did not find any colonies corresponding to the above; Ciferri also found *Arthrobotryum penicillium* on this specimen, and it is possible that the absence of setae was due to its parasitism, in which case *Asteridiella boedijnii* may be identical with *Meliola schefflerae* Hansf.

(1134) *Meliola heteroseta* von Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **118**: 1169. 1909.
= *Meliola leptoclada* Syd., Ann. Mycol. **20**: 62. 1922.
= *Meliola leptidea* Syd., loc. cit. **10**: 38. 1912.
= *Meliola leptidea* var. *major* Hansf., Proc. Linn. Soc. London **157**: 176. 1946.

Cols. epiphyllous, dense to rather thin, closely adherent, to 6 mm. diam., or numerous and widely confluent, sometimes thinly velvety. Hyphae substraight, branching opposite or irregular, acute; loosely to closely reticulate, cells mostly 25—35×7—10 μ. Ch. alternate or to 20% opposite, subantrorse, straight, 15—22 μ long; stc. cylindric, 4—7 μ long; hc. ovate to oblong, entire, 11—15×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—35×7—9 μ. Ms. few to fairly numerous, scattered and grouped around P., to 280×8—10 μ, 2—4-dichotomous above, branches recurved-speading, 1-ry to 80 μ, 2-ry to 60 μ, 3-ry to 40 μ, apices obtuse to subacute. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 43—52×19—22×17—18 μ.

On *Paratropia* (= *Schefflera*) sp., Java, Hoehnel, type (F); — On *Schefflera polybotrya*, Java, Boedijn in BO 17412, 13216; — On *S. octophylla*, China, PBS 11133, type of *M. leptoclada* (F); Formosa,

Yamamoto (USDA); — On *S.* spp., Philippines, PBS 30588; Congo Belge, Hendricky 2091 (type of *M. leptidea* var. *major*); — On *Cussonia spicata*, South Africa, PRET 405 (type of *M. leptidea*), 1774, 17759.

Yamamoto recorded *M. leptoclada* from Formosa, on *Heptapleurum arboricolum*, *Agalma luchuense* and *Gilibertia pellucidopunctata;* his specimens have not become available to the present writer.

The main difference between *Meliola leptidea* and *M. heteroseta* is that the spores of the former type measure mostly 15—20 μ in width; many more collections are needed from South Africa to establish whether or not this is a constant difference from the wider spores of the Java type. Von Hoehnel originally described his species as possessing preithecial setae, but re-examination has shown that these are merely the conidiophores of a *Helminthosporium* hyperparasite. In all Java collections seen, this occurs mixed with *Meliola pectinata.*

(1135) *Meliola boerlagiodendri* Yates, Philipp. Journ. Sci., C, Botany, **13**: 365. 1918.

Cols. amphigenous, rather thin, thinly velvety, to 10 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate-radiating, cells mostly 30—40 × 6—8 μ. Ch. alternate or up to 20 %opposite, more or less closely antrorse-bent, 13—22 μ long; stc. cylindric to cuneate, antrorsely bent, 4—7 μ long; hc. subglobose to piriform, entire, widely rounded at apex, 10—15 × 8—11 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 20—25 × 6—8 μ. Ms. numerous, straight below, up to 250 × 7—8 μ, widely 1—3-dichotomous above, branches 1-ry to 80 μ, 2-ry to 50 μ, 3-ry to 40 μ, acute. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—50 × 13—17 μ, the middle cell often the largest.

On *Boerlagiodendron* sp., Philippines, PBS 28911 (type), 15694.

(1136) *Meliola dichotoma* B. & C., Proc. Amer. Acad. Arts & Sci., **4**: 130. 1860.

= *Meliola hederae* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 53. 1941.

Cols. hypophyllous, dense, velvety, to 1,5 mm. diam. or numerous and confluent. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 15—25 × 7—8 μ. Ch. about 90 %opposite, somewhat antrorse, usually straight, 14—21 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. wide ovate or piriform, entire, widely rounded at apex, 10—16 × 8—11 μ. Mh. very few, mixed with ch., alternate or opposite, ampulliform, 16—23 × 7—9 μ. Ms. numerous, closely scattered, to 260 × 9—10 μ, 1—2-dichotomous above, the branches widely divergent or recurved, 1-ry to 100 μ, 2-ry when present to 60 μ, apices pale and obtuse. P. closely scattered, verrucose, to 250 μ diam.

Sp. oblong to subellipsoid, 4-septate, constricted, 44—50×17—19×12—14 μ.

On *Hedera* sp., Japan, Wright 171, type (K); — On *H. formosana*, Formosa, Yamamoto (type of *M. hederae*, USDA).

(1137) *Meliola dichotoma* B. & C. var. **kusanoi** (P. Henn.) Hansf., comb. n.

= *Meliola kusanoi* P. Henn., Englers Bot. Jahrb. **28**: 272. 1901.

Cols. amphigenous, dense, to 3 mm. diam., often confluent, sometimes on petioles. Hyphae substraight, branching opposite at wide angles, densely reticulate, cells mostly 15—20×7—10 μ. Ch. opposite or alternate in varying proportions, more or less antrorse, straight or slightly bent, 15—23 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate to clavate-cylindric, widely rounded at apex, 10—15×7—11 μ, entire. Mh. mixed with ch., alternate or opposite, ampulliform, 14—20×7—9 μ. Ms. fairly numerous, scattered, more or less straight, to 250×8—9 μ, simple and acute or obtuse, or more rarely 1—2-dichotomous with 1-ry branches to 50 μ, 2-ry to 40 μ, obtuse and paler. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 37—43×15—17 μ.

On *Hedera helix*, Japan, Kusano, 1897, type (S); Yoshinaga, 1901 (S).

(1138) *Meliola didymopanacis* P. Henn., Hedwigia **34**: 106. 1895.

Cols. epiphyllous, to 5 mm. diam. or numerous and widely confluent, dense, thinly velvety. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or about 5% opposite, more or less antrorse, straight or bent, 16—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose, ovate or piriform, entire, broadly rounded at apex, 11—16×8—11 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 16—23×7—9 μ. Ms. fairly numerous, scattered, to 300×8—9 μ, broadly arcuate to merely bent in upper part, simple, obtuse, gradually attenuate to 3—5 μ at apex. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—48×15—17 μ.

On *Didymopanax* sp., Brazil, Glaziou, 1893 (S, type); Noack **669**, with setae broadly uncinate to falcate (S).

(1139) *Meliola didymopanacis* P. Henn. var. *polysciatis* Hansf., Sydowia **9**: 15. 1955.

= *Meliola polysciatis* Hansf., Proc. Linn. Soc. London, **157**: 184. 1946.

Cols. epiphyllous, to 0,5 mm. diam., scarcely visible, velvety. Hyphae undulate, branching alternate, acute, loosely to closely radiating-reticulate, cells mostly 15—25×6—7 μ. Ch. alternate, straight or antrorsely bent, 13—20 μ long; stc. cylindric, 3—6 μ long; hc. piriform, entire, 9—14×8—11 μ. Mh. separate, crowded, opposite or alternate, ampulliform, 12—16×6—9 μ. Ms. numerous, flexuous

to broadly arcuate, 180—220×8—9 μ, simple, obtuse. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—47×15—17 μ.

On *Polyscias fulva*, Uganda, Hansford 3487 (type), 3595.

(1140) *Meliola didymopanacis* P. Henn. var. *domingensis* Hansf., Sydowia **9**: 15. 1955.

Cols. epiphyllous, to 5 mm., dense, velvety, sometimes confluent. Hyphae substraight, cells mostly 15—35×6—7 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate or to 30% opposite, usually straight, 12—18 μ long, more or less antrorse; src. cylindric to cuneate, 2—6 μ long; hc. ovate, entire, rounded to somewhat pointed at apex, 10—15×7—10 μ. Mh. mixed with ch., usually few, opposite or alternate, ampulliform, 16—20×7—8 μ. Ms. closely scattered, simple, obtuse, to 280×6—8 μ, nearly straight, broadly arcuate or sometimes uncinate, near the apex often slightly torulose. P. closely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×14—16 μ.

On *Didymopanax morototoni*, San Domingo, Ciferri, Mycofl. doming. exs. 264, type.

(1141) *Meliola didymopanacis* P. Henn. var. *stevensii* Hansf., Sydowia **9**: 15. 1955.

Cols. amphigenous, mostly hypophyllous, velvety, to 10 mm. diam., rather dense. Hyphae substraight, branching mostly opposite at acute angles, closely reticulate, cells mostly 20—30×7—9 μ. Ch. opposite or to 40% alternate, more or less antrorse, straight or slightly bent, 12—18 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. subglobose to ovate, entire, 10—12×8—11 μ. Mh. mixed with ch., few, mostly alternate, ampulliform, 18—24×7—10 μ. Ms. numerous, scattered, straight, simple, acute, to 1000×9—12 μ. P. scattered, verrucose, to 210 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 39—45×14—16 μ.

On *Dendropanax arboreum*, Porto Rico, Stevens 7647 (type), 7775, 7740; — On *D. laurifolia*, Porto Rico, Stevens 8265, 5956 (FLS); — On *Araliaceae* indet., Porto Rico, Balbis s. n. (P).

(1142) *Meliola schefflerae* Hansf., Reinwardtia **3**: 79. 1954.

Cols. epiphyllous, dense, to 3 mm. diam., somewhat velvety. Hyphae substraight to crooked, branching close, opposite or irregular, acute, very closely reticulate and becoming solid in centre, cells mostly 15—20×7—9 μ. Ch. alternate or opposite in varying proportions, more or less antrorse, 14—20 μ long, straight; stc. cylindric to cuneate, 3—8 μ long; hc. globose to widely piriform, entire, 12—15×10—13 μ. Mh. separate, opposite, ampulliform, 15—20×7—10 μ. Ms. thinly scattered and grouped around P., simple, straight, acute, to 260×8—11 μ. P. in central group, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 45—51×17—19 μ.

On *Schefflera aromatica*, Java, BO 11740, type; — On *S. polybotrya*, Java, BO 13216; — On *S.* sp., Philippines, PBS 32129, with setae to 450 μ long (FLS); — On *Aralia* sp., New Guinea, Shaw 645 (WARI 7763).

(1143) *Meliola irosinensis* Syd., Leafl. Philipp. Bot. **9**: 3118. 1925.

Cols. epiphyllous, dense, to 4 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite at varying angles, closely reticulate, cells mostly 15—30×6—7 μ. Ch. alternate or opposite in varying proportions, spreading or subantrorse, straight or slightly bent, 13—18 μ long; stc. cuneate or cylindric, 3—6 μ long; hc. ovate to cylindric with rounded to slightly attenuate apex, usually straight, 10—14×8—10 μ. Mh. separate, opposite or unilateral, ampulliform, 16—21×7—9 μ. Ms. few to numerous, thinly scattered and grouped around P., straight, simple, obtuse, to 280×7—9 μ. P. in loose central group, slightly verrucose, to 170 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—47×18—20×14—16 μ.

On *Boerlagiodendron* sp., Philippines, Elmer 14526, type.

(1144) *Meliola pectinata* von Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **118**: 1170. 1909.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense and nearly solid. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 20—30×7—9 μ. Ch. opposite save where too crowded, more or less antrorse, 16—24 μ long; stc. cylindric, 4—6 μ long; subglobose to piriform, entire or shallowly rounded-angulose, 12—19×12—15 μ. Mh. separate, opposite or alternate, ampulliform, 15—22×7—10 μ. Ms. thinly scattered and grouped around P., straight, simple, acute, to 260×8—11 μ. P. scattered, verrucose, to 210 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 54—62×19—22 μ.

On *Paratropia* sp. (= *Schefflera*), Tjibodas, Java, von Hoehnel, type (F); — On *Schefflera polybotrya*, Java, Boedijn in BO 17412.

(1145) *Meliola acanthopanacis* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 224. 1941.

Cols. epiphyllous, subdense, thinly velvety, to 3 mm. diam. Hyphae substraight, branching opposite, acute, rather closely reticulate, cells mostly 18—25×7—9 μ. Ch. alternate or to 10% opposite, antrorse or spreading, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. oblong, ellipsoid or subglobose, entire, 11—14×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×7—9 μ. Ms. mostly grouped around P., straight, simple, acute, to 810×10—13 μ. P. closely scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—48×14—17×12—14 μ.

On *Acanthopanax trifoliatum*, Formosa , Yamamoto, type (USDA).

(1146) *Meliola araliicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 224. 1941.

Cols. epiphyllous, dense, to 3 mm. diam. or sometimes confluent. Hyphae straight or undulate, branching opposite, rectangular, loosely reticulate, cells 11—23×7—9 μ. Ch. alternate or rarely opposite; stc. 3—7 μ long; hc. globose to subglobose, entire, 9—14×9—12 μ. Mh. not numerous, opposite or alternate, ampulliform, 16—25×7—9 μ. Ms. not numerous, mostly around P., straight, simple, acute, to 640×9—10 μ. P. in central loose group, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—48×12—16 μ.

On *Aralia decaisneana*, Formosa, Yamamoto.

The above description is adapted from the original, as specimens have not been available to me.

Host Family 214. Clethraceae.

(1147) **Asteridiella clethrae** Hansf., spec. nov.

Cols. epiphyllous, to 4 mm. diam., thin, smooth. Hyphae substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 12—20×7—8 μ. Ch. alternate, straight, somewhat antrorse, 17—22 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. globose, entire, 11—14 μ diam. Mh. mixed with ch., alternate, ampulliform, 15—20×7—8 .Mature P. not seen, scattered, verrucose. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—41×17—18 μ.

On *Clethra lancifolia*, Philippines, Baker 395, type (S, FLS); — On *C.* sp., British North Borneo, Clemens s. n. (BM), with cols. amphigenous, the hypophyllous colonies with more crooked hyphae and ch. angulose to sublobate.

Host Family 215. Ericaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.6230	Cols. subdense; hyphae straight to tortuous; subglobose to angulose; app. obtuse, to 60×25 μ	*camerunensis*	(1148)

Asteridiella

2101.5240	Cols. dense; hyphae substraight to undulate; hc. small, ovate, entire; P-cells to 25 μ	*andromedae*	(1149)
2101.5230	Cols. dense; hyphae straight to undulate; hc. larger, subglobose to clavate, entire; P-cells scarcely projecting	*agauriae*	(1150)
2101.5220	Cols. subdense; hyphae straight or undulate; hc. large, piriform, entire; P-cells to 20 μ	*gaylussaciae*	(1151)
3101.6430	Cols. dense; hyphae substraight; hc. clavate to lobate; sp. wide ellipsoid	*puiggariana*	(1152)
3101.4320	Cols. thin; hyphae undulate; hc. subglobose, entire or angulose	*rhododendri*	(1153)

Meliola

2111.5232	Cols. dense, subvelvety; hyphae straight or undulate; hc. angulose to lobate; ms. acute *niessleana*	(1154)
2111.6332	Cols. dense, velvety; hyphae undulate to crooked; hc. lobate, large; ms. acute..... *agauriae*	(1155)

(1148) *Appendiculella camerunensis* Hansf., Sydowia **10**: 47. 1957.

Cols. hypophyllous, subdense, smooth, to 6 mm. diam. or sometimes confluent. Hyphae substraight to tortuous, opposite or irregularly branched at acute angles, closely interwoven-reticulate, cells mostly 20—35×6—7 μ. Ch. alternate or more scattered ,bent, 18—35 μ long; stc. cylindric to gibbous, bent, 6—25 μ long; hc. subglobose, ovate, piriform or angulose, often bent, 10—15×8—14 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 15—20×7—9 μ. P. few, scattered, verrucose, to 290 μ diam.; app. numerous, dark brown, continuous to cylindric, transversely striate, obtuse, curved above, to 60 μ high, about 25 μ diam. at base, attenuate to 10 μ at apex. Sp. ellipsoid to fusoid, often slightly bent, ends obtuse to subacute, 3-septate, constricted, 38—62×15—18 μ.

On *Agauria* sp., Cameroun, Jacques-Felix 2900, type (P).

(1149) *Asteridiella andromedae* (Pat.) Hansf., Sydowia **10**: 46. 1957.

= *Meliola andromedae* Pat., Rev. Mycol. **10**: 137. 1888.
= *Irene andromedae* (Pat.) Syd., Ann. Mycol. **15**: 194. 1917.
= *Irenina andromedae* (Pat.) Stev., l. c., **25**: 447. 1927.

Cols. hypophyllous, dense, to 6 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, at wide angles, becoming nearly solid in centre, cells mostly 15—30×6—8 μ. Ch. alternate, spreading or variously bent, 13—22 μ long; stc. cylindric, 3—9 μ long; hc. ovoid, entire, often bent, 10—13×8—11 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 14—19×6—7 μ. P. in central group, verrucose, to 350 μ diam., surface cells obtusely conoid, to 25 μ high. Sp. oblong, obtuse, 3-septate, strongly constricted, 48—54×16—18 μ, cells subglobose.

On *Agauria (Andromeda) salicifolia*, Reunion, Vincent (P, type), Boivin (P).

(1150) *Asteridiella agauriae* (Hansf.) Hansf., Sydowia **10**: 46. 1957. (2101.5230)

= *Irenina agauriae* Hansf., Proc. Linn. Soc. London **158**: 30. 1946.

Cols. epiphyllous, smooth, to 2 mm. diam., dense. Hyphae substraight or slightly flexuous, branching opposite, acute, densely reticulate, cells mostly 20—30×7—10 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 16—26 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. subglobose to clavate, entire or sometimes

slightly angulose, straight or slightly bent, 11—18×10—13 μ. Mh. mostly separate, opposite or alternate, ampulliform, 20—28×10—12 μ, sometimes densely crowded and ternate. P. scattered, verrucose, to 280 μ diam., surface cells rounded and little projecting; on a radiate subiculum which often elevates the mature perithecium, to render it very easily secedent. Sp. ellipsoid to subfusoid, obtuse, more or less bent, 3-septate, slightly constricted, 50—58×17—20 μ.

On *Agauria salicifolia*, Congo Belge, Hendrickx 2538, type; 3785, 3911 p. p.

(1151) *Asteridiella gaylussaciae* Hansf., Sydowia **10**: 48. 1957.

= *Irene gaylussaciae* Hansf., Sydowia **9**: 55. 1955.

Cols. epiphyllous, to 2 mm. diam., rather dense. Hyphae substraight to flexuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate, spreading, straight or bent, 18—24 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. piriform, entire, 13—16×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform 17—23×8—9 μ. P. scattered, verrucose, to 170 μ diam., surface cells obtusely rounded or sub-mammillate, to 20 μ high. Sp. subellipsoid, obtuse, 3-septate, constricted, 44—52× 16—18 μ.

On *Gaylussacia brasiliensis*, Brazil, Ule, Herb. brasil. 90 (P, S), type, originally reported by Gaillard as *Meliola pulchella*.

(1152) *Asteridiella puiggariana* Hansf., Sydowia **10**: 58. 1957.

Cols. epiphyllous, dense, smooth, to 1 mm. diam. Hyphae substraight, branching opposite, acute, densely radiating-reticulate and almost solid, cells mostly 20—25×7—9 μ. Ch. alternate or very rarely opposite, antrorse, straight or bent, 25—40 μ long; stc. cylindric, to cuneate, 5—15 μ long; hc. irregularly clavate, angulose to lobate, versiform, 18—30×12—18 μ. Mh. few, mixed with ch. in centre, opposite or alternate, ampulliform, 20—26×8—10 μ. P. few, scattered, globose, verrucose, to 300 μ diam., surface cells rounded or obtuse conoid, to 12 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 54—62×27—32 μ.

On ? *Gaylussacia* sp., Sao Paulo, Brazil, Puiggari 315, type (SPEG 612).

(1153) *Asteridiella rhododendri* (Yamam.) Hansf., Sydowia **10**: 50. 1957.

= *Irenina rhododendri* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 17. 1941.

Cols. epiphyllous, to 6 mm. diam. or confluent, thin. Hyphae undulate, branching opposite, rectangular, loosely reticulate, cells mostly 25—30 μ long. Ch. alternate, spreading or antrorse, straight or bent, 17—25 μ long; stc. cylindric, 4—10 μ long; hc. subglobose to oblong, entire or sometimes angulose to sublobate, 13—16×8—13 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 18—25×7—8 μ,

neck elongate. P. scattered, verrucose, to 195 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 39—48×14—21 μ, the middle cell sometimes slightly the largest.

On *Rhododendron oldhami*, Formosa, Yamamoto, type; — On *R. quadrasianum*, Philippines, PBS 3533 (S), with cols. amphigenous, mostly hypophyllous.

(1154) *Meliola niessleana* Wint., Hedwigia 24: 260. 1885.

= *Meliola ellisii* Roum., Rev. Mycol. 2: 200. 1880 (sine diagn.)

Cols. amphigenous, to 2 mm. diam., thin to dense. Hyphae substraight to undulate, branching mostly opposite at wide angles, loosely to closely reticulate, cells mostly 25—30×7 μ. Ch. alternate, straight or bent, more or less antrorse, 20—29 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. versiform, irregularly lobate to rounded-angulose, straight or bent, sometimes flattened, 10—22×10—18 μ. Mh. few, alternate, ampulliform, 18—21×8—10 μ, mixed with ch. Ms. few to numerous, scattered and grouped around P., straight, simple, acute, to 450×9—11 μ. P. scattered, verrucose, to 260 μ diam. Sp. ellipsoid to fusoid, often bent, ends attenuate-rounded and obtuse, 3-septate, slightly constricted, 45—55×14—16 μ.

(On *Vaccinium corymbosum*,U.S.A., Ellis in Roum., Fung. gall. sel. 896, type of M. ellisii); — On *Rhododendron chamaecistus*, Austria, Niessl in Rabh.-Wint., Fung. europ. 3339 and in Rehm, Ascomyc. 898, parts of type collection; — On *Gaultheria shallon*, California, Univ. Calif. Herb. 274 (K, S); — On *G. cumingiana*, Formosa, Yamamoto; — On *Erica carnea*, Austria, Petrak, Mycoth. gener. 1332.

(1155) *Meliola agauriae* Hansf., Proc. Linn. Soc. London 150: 23. 1947.

Cols. mostly epiphyllous, rarely hypophyllous, velvety, dense, subcrustose, to 4 mm. diam. Hyphae undulate to crooked, branching opposite or irregular, acute, closely reticulate, cells mostly 30—50×8—10 μ. Ch. alternate, spreading or antrorse, irregularly bent, 28—45 μ long; stc. cylindric or cuneate, often bent, 4—20 μ long; hc. very irregularly lobed and bent, versiform, 20—28×12—22 μ. Mh. rare, mixed with ch., alternate, ampulliform, 20—30×7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 400×9—11 μ. P. closely scattered, very rough, to 300 μ diam. Sp. bent fusoid with obtuse ends, 3-septate, slightly constricted, 61—71×22—25 μ.

On *Agauria salicifolia*, Congo Belge, Hendrickx 3141 p. p., type, 3911; — On *Cavendishia* sp., Costa Rica, Stevens 54. 66, with spores 54—74×22—28 μ (FLS).

(1156) *Meliola callosperma* Speg., Bol. Acad. Nac. Cien. Cordoba, 23: 000. 1919.

= *Meliolinopsis callosperma* (Speg.) Beeli, Bull. Jard. Bot. Bruxelles 8: 120. 1920.

The type specimen (SPEG 612) of Puiggari 315, on ? *Gaylussacia* sp., Apiahy, Brazil, shows:

(a) *Asterina* sp., with alternate, globose, sessile hyphopodia, arising from 1-septate ascospores.

(b) *Asteridiella puiggariana* Hansf.

(c) *Phaeophragmeriella* sp. indet., parasitic on (b).

Spegazzini described the mycelium of (a), with the perithecia and spores of (c), and his name is therefore a nomen confusum; indicated by his sketches on the packet.

Host Family 216. Vacciniaceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.6330	Cols. thin; hyphae straight to flexuous; hc. cylindric-clavate to sublobate; spp. 6—18, obtuse, to 90×30 μ	*vaccinii*	(1157)
2101.4240	Cols. thin; hyphae straight to undulate; hc. oblong-ellipsoid, entire; app. numerous, obtuse, to 115×25 μ	*musyaensis*	(1158)

Irenopsis

3401.6340	Cols. dense, crustose; hyphae undulate; hc. oblong; ps. 9—17, straight, obtuse, septate, to 280 μ long	*sinsuiensis*	(1159)

Asteridiella

2101.5230	Cols. thin; hyphae undulate; hc. lobate; sp. subfusoid	*exilis*	(1160)
3101.3220	Cols. thin to subdense; hyphae straight to undulate; hc. oblong-clavulate, entire; sp. oblong-ellipsoid	*vacciniicola*	(1161)

Meliola

2111.5232	Cols. dense, subvelvety; hc. angulose to sublobate; ms. obtuse	*niessleana*	(1162)
3113.4233	Cols. dense, velvety; hc. ovate-cylindric, entire; ms. obtuse to acute	*vaccinii*	(1164)
2113.6343	Cols. dense, velvety; hyphae substraight to sinuous; hc. deeply lobate; ms. acute	*atkinsonii*	(1163)
2113.62×3	Cols. thin; hc. angulose; ms. acute	"*vaccinii* Toch. & Yamagiwa"	(1165)

(1157) ***Appendiculella vaccinii*** Hansf., comb. n.

= *Irene vaccinii* Hansf., Proc. Linn. Soc. London **157**: 167. 1946.

Cols. amphigenous, thin, to 5 mm. diam. or confluent. Hyphae straight to flexuous, branching alternate or irregular, acute, loosely radiating-reticulate, cells mostly 25—35×6—8 μ. Ch. alternate, spreading or antrorse, usually bent, 25—32 μ long; stc. cuneate, 6—12 μ long; hc. cylindric-clavate, entire or irregular to sublobate,

usually more or less bent, 16—22×9—12 μ. P. scattered, each on a disc of radiate hyphae ,to 240 μ diam.; app. 6—18, conic, bent, obtuse, thin-walled and translucent pale brown, transversely striate, to 90×30 μ wide at base. Sp. narrowly ellipsoid, usually slightly bent, obtuse, 3-septate, constricted, 55—63×16—18 μ.

On *Vaccinium stanleyi*, Congo Belge, Hendrickx 2088, type.

(1158) **Appendiculella musyaensis** (Yamam.) Hansf., comb. n.

= *Irene musyaensis* Yamamoto, Trans. Nat. Hist. Soc. Formosa **31**: 48. 1941.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., thin. Hyphae straight to undulate, branching usually opposite, cells 16—46 ×8—10 μ. Ch. alternate, clavate, straight or curved; stc. 9—14 μ long; hc. oblong to ellipsoid, 16—21×12—15 μ. Mh. few, opposite, alternate or solitary, ampulliform, 23—30×9—10 μ. P. in central group, verrucose, to 350 μ diam.; app. numerous, lavriform, attenuate towards apex, rigid, 40—115×18—25 μ thick at base, often 2—5-aggregate. Sp. elongate ellipsoid, obtuse, 3-septate, slightly constricted, 41—50×14—19 μ.

On *Vaccinium formosanum*, Formosa, Yamamoto, not seen by the present writer.

(1159) *Irenopsis sinsuiensis* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **30**: 414. 1940.

Cols. mostly epiphyllous, to 5 mm. diam., crustose, dense. Hyphae undulate, branching alternate, densely reticulate, cells 25—42×9—12 μ. Ch. alternate, more or less bent; stc. cuneate, 11—25 μ long; hc. oblong, 21—30×14—20 μ. Mh. few, alternate, unilateral or solitary, ampulliform, 21—35×9—13 μ. P. scattered or crowded. verrucose, setose, to 350 μ diam.; ps. 9—17, straight, simple, obtuse, fuscous, septate, 84—280×9—13 μ. Sp. elongate ellipsoid, obtuse, 4-septate, slightly constricted, 70—83×22—25 μ.

On *Vaccinium caudatifolium*, Formosa, Yamamoto, not available to present writer.

(1160) *Asteridiella exilis* (Syd.) Hansf., Sydowia Beih. **1**: 88. 1957.

= *Meliola exilis* Syd., Ann. Mycol. **2**: 170. 1904.

= *Irene exilis* (Syd.) Stev., Bull. Bishop Mus. **19**: 41. 1925.

= *Irenina exilis* (Syd.) Stev., Ann. Mycol. **25**: 449. 1927.

Cols. amphigenous, mostly hypophyllous, thin. Hyphae finely undulate, branching opposite or irregular at varying angles, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, spreading, usually bent, 22—40 μ long; stc. cylindric to cuneate, 6—18 μ long. hc. versiform, irregulrly lobate, often bent, 17—25×12—17 μ. Mh; few, mixed with ch., alternate or opposite, 17—23×7—9 μ. P. solitary or few in each colony, verrucose, to 280 μ diam., surface cells obtusely conoid or truncate at apex, to 20 μ high. Sp. fusoid with subacute ends, 3-septate, constricted, 46—60×15—19 μ.

On *Gaultheria* sp., Chile, Neger, type (FLS); — On *Vaccinium reticulatum*, Hawaii, Stevens 821 p. p., with sp. 45—56×15—19 μ, with more rounded ends.

(1161) *Asteridiella vacciniicola* Hansf., Sydowia **11**:49. 1958.

Cols. amphigenous, thin to subdense, smooth, to 2 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite at wide angles, loosely to closely reticulate, cells mostly 15—25×7—8 μ. Ch. alternate or very rarely opposite, spreading, mostly bent, 12—21 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. oblong to clavulate, entire, 12—16×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×7—8 μ. P. scattered, globose, rough, to 120 μ diam. (immature), surface cells obtusely conoid, to 20 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—38×16—19 μ.

On *Vaccinium benguetense*, Philippines, Stevens 1342, type (FLS).

(1162) *Meliola niessleana* Wint., Hedwigia **24**: 260. 1885.
= *Meliola ellisii* Roum., Rev. Mycol. 2: 200. 1880, sine diagn.
= *Meliola nidulans* (Schw.) Cooke var. *germanica* Rehm in Krieger, Fung. saxon. 1661l.

Cols. amphigenous, dense, also on petioles and stems, to 2 mm. diam., slightly velvety. Hyphae substraight to sinuous, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 20—40×6—8 μ. Ch. alternate, spreading or subantrorse, straight or variously bent, 20—32 μ long; stc. cylindric to cuneate, 6—15 μ long; hc. irregular, versiform, angulose to sublobate, often bent, 13—21×10—17 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 20—25×7—10 μ. Ms. few to numerous, scattered and grouped around P., straight or slightly flexuous, simple, obtuse to subacute, to 400×7—9 μ, the apex usually 3—4 μ thick. P. scattered, verrucose, to 250 μ diam. Sp. subfusoid, obtuse, bent, 3-septate, rather strongly constricted, 47—53×14—19 μ, sometimes the middle cells subglobose.

On *Vaccinium corymbosum*, U.S.A., Ellis in Roum, Fung. gall. sel. 896 (type of *M. ellisii*), Ellis in Rehm, Ascomyc. 287, Ellis, N. Amer. Fungi 192, Ellis & Everh., Fung. columb. 1546; Nash. Plants of Florida 2177 (CUP); — On *V. vitis-idaea*, Germany, Krieger, Fung. saxon. 1611, 1612, Schmidt s. n., 1900 (S), Petrak, Fl. bohem. exs. 2: 1750; — On *V. myrtillus*, Germany, Jaap, Fung. sel. exs. 186, Sydow, Mycoth. germ. 377; — On *V. cubense*, San Domingo, Ciferri, Mycofl. doming. exs. 59, Ciferri 2600 (S); — On *V. virgatum*, U.S.A., Carver 844, with sp. to 63×20 μ (F).

(1163) *Meliola atkinsonii* Hansf., Sydowia **10**: 63. 1957.

Cols. caulicolous, dense, velvety, to 6 mm. diam. or confluent.

Hyphae substraight to sinuous, branching alternate or irregular, not opposite, acute, densely reticulate and nearly solid, cells mostly 20—30×7—8 μ. Ch. alternate or to 5% opposite,antrorse or spreading, usually bent, 25—40 μ long (many mycelial branches with none); stc. cylindric to cuneate, 7—23 μ long; hc. very irregularly and deeply lobate, versiform, 18—24×13—26 μ. Mh. very few, septate, alternate, ampulliform, 17—22×7—9 μ. Ms. very numerous, straight, simple, acute, to 530—10×11 μ. P. closely scattered, verrucose, to 350 μ diam. Sp. fusoid, obtuse, more or less bent, 3-septate, constricted 60—72×20—24 μ.

On *Vaccinium corymbosum*, U.S.A., Atkinson 2333 (CUP), type; Ravenel, Fung. carol. exs. I: 50 (F); — On *V.* sp., U.S.A., Thaxter 7517 (F);

(1164) *Meliola vaccinii* Stev., Bishop Mus. Bull., **19**: 30. 1925.

Cols. amphigenous, dense, velvety, to 1 mm. diam. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 20—25×7—8 μ. Ch. alternate or to 10% opposite, slightly antrorse, usually straight, 18—26 μ long; stc. cylindric, 5—8 μ long; hc. cylindric with rounded apex, or slightly ovate, entire, 12—16× 8—10 μ. Mh. not seen. Ms. scattered, straight or widely arcuate, not uncinate, simple, obtuse, to 600×9—10 μ, abruptly attenuate above and rarely acute. P. closely scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 43—48× 16—18 μ.

On *Vaccinium reticulatum*, Hawaii, Stevens 739 (type), 1146, 694, 826 p. p., 866 (FLS).

In the original description Stevens mentioned perithecial setae, but in all specimens examined by me, all setae arise either from the mycelium or from hyphae around the base of the perithecium; none were found on the perithecial wall itself.

(1165) *Meliola vaccinii* Tochinai & Yamagiwa, Trans. Sapporo Nat. Hist. Soc. **13**: 144. 1934.

Cols. hypophyllous, to 2 mm. diam. dense. Hyphae 6—8 μ thick, branching opposite, closely reticulate. Ch. mostly alternate, stipitate, 17,5—22,5×12,5—15 μ; hc. versiform, rhomboid to angulose. Ms. simple, straight, attenuate to apex, to 520×10 μ. P. verruculose. Sp. cylindric, 3-septate, slightly constricted, 45—77×15—19 μ.

On *Vaccinium vitis-idaei*, Jaman, Imai & Yamagiwa, type.

No specimens of this species have become available to the present writer, but the spore size given indicates affinity with *M. atkinsonii*. The specific epithet above is ante-dated by *M. vaccinii* Stevnes (1925), but re-examination of the type is required before it can be re-named as distinct from other species on *Vacciniaceae*.

(1166) *Meliola cyathodis* Hansf., Proc. Linn. Soc. London **157**:

Cols. hypophyllous, rather thin, to 2 mm. diam. Hyphae substraight, flexuous or sinuous, branching usually opposite at acute angles, loosely to subdensely reticulate, cells 10—30×7—9 μ. Ch. alternate or to about 5% opposite, straight or bent, spreading or antrorse, 23—35 μ long; stc. cylindric, often irregularly bent, 7—14 μ long; hc. very irregularly 2—5-lobate or merely angulose, often bent, versiform, 15—25×10—20 μ. Mh. mixed with ch., mostly alternate, ampulliform, 13—22×7—9 μ. Ms. few, scattered, straight, simple, acute, to 360×9—10 μ. P. in central group, verrucose, to 240 μ diam. Sp. oblong to ellipsoid or subfusoid, ends attenuate-rounded, straight or slightly bent, 3-septate, constricted, 53—63×16—18 μ.

On *Cyathodes glaucus*, Tasmania, Rodway 421, type.

(1167) *Meliola cyathodis* Hansf. var. *trochocarpae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 56. 1953.

Cols. amphigenous, mostly hypophyllous, rather dense, to 2 mm. diam. Hyphae undulate, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate or about 1% opposite, more or less antrorse, straight or variously bent, 22—35 μ long; stc. cylindric to cuneate, 6—20 μ long; hc. irregularly rounded-lobate, versiform, 15—23×12—18 μ. Mh. mixed with ch., mostly alternate, ampulliform, 14—20×6—9 μ. Ms. very few, grouped around P., straight or flexuous, simple, obtuse, to 200×6—8 μ, sometimes descending to the mycelium. P. in loose central group, verrucose. to 350 μ diam., surface cells conoid to mammillate. projecting to 30 μ, and about 50 μ diam. at the base. Sp. bent fusoid, 3-septate, constricted, 45—54×16—18 μ, end cells small, rounded to conoid.

On *Trochocarpus laurina*, New South Wales, Fraser, type.

(1168) *Meliola cyathodis* Hansf. var. *stypheliae* Hansf., Reinwardtia **3**: 82. 1954.

Cols. amphigenous, to 1 mm. diam., dense, strongly adherent. Hyphae sinuous to flexuous, branching close, opposite or irregular, densely reticulate and becoming almost solid, cells mostly 15—20×7—10 μ. Ch. alternate, usually much bent, 23—35 μ long; antrorse, spreading or recurved; stc. cylindric to cuneate, bent, 5—18 μ long; hc. clavate to piriform and entire, or very irregularly and deeply stellate-lobate, 15—23×11—18 μ. Mh. not seen. Ms. few, often none, grouped around P., straight or subhamate at apex, simple, obtuse, to 350×8—9 μ. P. few, in loose central group, verrucose, to 230 μ diam. Sp. bent fusoid with obtusely conoid ends, 3-septate, slightly constricted, 60—72×18—20 μ.

On *Styphelia philippinensis*, Celebes, Bunnemeijer 12220-a, type, (BO 13640).

Host Family 221. Ebenaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

2101.5230	Cols. dense; hyphae straight to sinuous; hc. angulose to lobate; P-cells with corniform processes to 40×25 μ, obtuse	*diospyricola*	(1169)
3103.53×0	Cols. dense; hyphae substraight; hc. clavate, entire	*eucleae*	(1170)

Meliola

3111.6333	Cols. dense, velvety; hyphae substraight; hc. ovate-piriform, entire; ms. obtuse	*megalocarpa*	(1171)
3113.6333	Cols. dense, velvety; hyphae substraight to undulate; hc. crenate-lobate; ms. acute	*diospyri-pentamerae*	(1172)
3113.4234	Cols. thin; hyphae undulate; hc. ovate to clavate, or angulose; ms. obtuse	*eucleae*	(1173)
3113.4233	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-oblong, entire; ms. acute	*diospyricola*	(1174)
3113.4223	Cols. dense, velvety; hyphae substraight; hc. globose-oblong, entire; ms. obtuse	*diospyri*	(1175)
3112.4223	Cols. subdense, subvelvety; hyphae straight; hc. ovate-subconoid, entire; ms. obtuse	*diospyri* var. *leonensis*	(1176)
3112.53×3	Cols. dense; hyphae straight; hc. globose to clavate, entire; ms. obtuse to subacute	*diospyri* var. *yatesiana*	(1177)
3111.4224	Cols. thin, hirsute; hyphae tortuous; hc. small, globose; ms. obtuse to subacute	*hirsuta*	(1178)
3113.4224	Cols. thin, subvelvety; hyphae substraight to undulate; hc. oblong-clavate, entire; ms. obtuse; sp. larger	*hirsuta* var. *major*	(1179)

(1169) *Asteridiella diospyricola* (Hansf. & Deight.) Hansf., Sydowia 10: 47. 1957.

= *Irenina diospyricola* Hansf. & Deight., Mycol. Paper, IMI **23**: 48. 1948.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae straight to sinuous, branching opposite or unilateral at wide angles, densely reticulate, cells mostly 18—20×6—10 μ. Ch. alternate, antrorse, straight or bent, 23—32 μ long; stc. cuneate, 6—14 μ long; hc. usually 3—4-lobate or irregularly angulose, 15—22×15—22 μ. Mh. few, mixed with ch., opposite or alternate, 15—22×7—9 μ, ampulliform. P. scattered, to 240 μ diam., surface cells produced into obtuse, translucent dark brown, corniform, transversely striate processes to 40 μ long and 25 μ diam. at the base, often bent above, obtuse. Sp.

widely fusoid, obtuse, laterally bent, 3-septate, slightly constricted, 42—52×14—18 μ.

On *Diospyros heudelotii*, Sierra Leone, Deighton 2428 (type), 1928 p. p., 2099 p. p.

(1170) *Asteridiella eucleae* Hansf., Sydowia **10**: 48. 1957.

= *Irenina eucleae* Hansf., Proc. Linn. Soc. London **159**: 124. 1947.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 15—25×8—9 μ. Ch. alternate or to 10% opposite, straight or slightly bent, more or less antrorse, 18—30 μ long; stc, cylindric to cuneate, 5—13 μ long; hc. clavate, straight or slightly bent, entire or rarely truncate or angulose, 13—18×9—16 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 18—27×7—9 μ. P. scattered. arising from a solid radiate disc. immature. Sp. oblong to subellipsoid, obtuse, rather strongly constricted, 45—52×19—21 μ.

On *Euclea latidens*, Mt. Ruwenzori, Congo Belge, Hendrickx 2745, type.

(1171) *Meliola megalocarpa* Syd., Ann. Mycol. **21**: 94. 1923.

Cols. amphigenous, to 6 mm. diam. or confluent, dense, velvety. Hyphae substraight, branching opposite at wide angles, densely reticulate and becoming nearly solid in places, the cells mostly 15—30× 9—11 μ. Ch. alternate or to about 1% opposite, slightly antrorse, straight or slightly recurved above, 20—28 μ; stc. cylindric, 4—10 μ long; hc. ovate, piriform or oblong, entire, straight or slightly bent, 16—20×10—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 22—27×9—11 μ. Ms. few to numerous, scattered, straight, simple, obtuse, to 800×11—13 μ. P. scattered, or loosely aggregate, verrucose, to 220 diam. Sp. oblong, obtuse, 4-septate, constricted, 57—62×22—26 μ.

On *Maba buxifolia*, Philippines, PBS 21213, type (FLS).

(1172) *Meliola diospyri-pentamerae* Hansf., Proc. Linn. Soc. N. S. W. **78**: 55. 1953.

Cols. epiphyllous or amphigenous, dense, to 3 mm. diam., velvety. Hyphae substraight to undulate or crooked, branching opposite or irregular at wide angles, closely reticulate and nearly solid, cells mostly 20—30×6—8 μ. Ch. alternate, straight or bent, spreading, 22—50 μ long; stc. cylindric, often bent to flexuous, 5—30 μ long, sometimes 1-septate in hypophyllous colonies; hc. versiform, from subglobose and entire to irregularly angulose or lobate, often much bent, 13—26×10—19 μ. Mh. mixed with ch., alternate, rarely opposite, conoid to ampulliform, 18—29×7—9 μ. Ms. few to numerous, scattered, straight, simple, acute or subacute, to 750×8—11 μ. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 50—62×19—23 μ,

On *Diospyros pentamera*, New South Wales, Fraser 53 (type), 140, 202; — On *D. australis*, l. c., Fraser 104.

(1173) *Meliola eucleae* Hansf., Proc. Linn. Soc. London **153**: 10. 1941.

Cols. mostly hypophyllous, to 5 mm. diam., thin. Hyphae undulate, branching opposite or irregular at acute angles, loosely reticulate, cells mostly 25—40×6—7 μ. Ch. alternate or opposite, spreading or antrorse, straight or bent, 17—25 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. clavate, entire or angulose, rarely sublobate, straight or bent, 12—19×9—12 μ. Mh. separate or mixed with ch., opposite or alternate, conoid to ampulliform, 20—25×7—9 μ. Ms. scattered and grouped around P., simple, straight, obtuse, to 1250×8—9 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—49×15—19 μ.

On *Euclea divinorum*, Uganda, Hansford 2125, type.

(1174) *Meliola diospyricola* Hansf., Proc. Linn. Soc. N. S. W. **78**: 55. 1953.

Cols. amphigenous, mostly hypophyllous, dense, velvety, to 4 mm. diam., sometimes confluent. Hyphae substraight to undulate, cells mostly 15—25 μ long, branching opposite at wide angles, closely reticulate; on lower surface the hyphae much more crooked and irregular. Ch. alternate or about 3% opposite, more or less antrorse, straight or bent, 16—24 μ long; stc. cylindric, 4—9 μ long; hc. ovate to cylindric, often slightly recurved above, entire, 11—18×8—11 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 15—25×7—8 μ. Ms. numerous, scattered, straight, simple, acute or subacute, to 750×9—11 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—48×16—19 μ.

On *Diospyros australis*, New South Wales, Fraser 104-a (type), 104, 156; — On *D. maritima*, Philippines, PBS 32172 (F); PBS 36173, 34280 (FLS).

(1175) *Meliola diospyri* Syd., Ann. Mycol. **9**: 381. 1911.

Cols. amphigenous, dense, velvety. to 5 mm. diam. or confluent. Hyphae substraight, branching opposite, acute, densely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate or to 90% opposite, mostly straight, spreading or slightly antrorse, 12—17 μ long; stc. cylindric 2—6 μ long; hc. globose to oblong, widely rounded at apex, 9—13× 8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 17—22×7—9 μ. Ms. thickly scattered and grouped around P., straight, simple, obtuse, to 700×10—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—43×14—15× 12—13 μ.

On *Diospyros montana*, India, Herb. Crypt. Ind. Or. 1044, type (S. ex Sydow).

(1176) *Meliola diospyri* Syd. var. *leonensis* Hansf., Sydowia **9**: 15. 1955.

Cols. epiphyllous, to 4 mm. diam., rather dense, slightly velvety. Hyphae substraight, branching opposite, acute, rather closely reticulate cells mostly 17—23×6—8 μ. Ch. almost entirely opposite, antrorse, usually straight, 14—18 μ long; stc. cylindric, 3—6 μ long; hc. ovate to subconoid, straight or slightly bent, entire, the apey rounded or attenuate, 10—13×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—24×7—8 μ. Ms. numerous, scattered and grouped around P., straight, simple, obtuse, to 700× 9—11 μ, those around P. shorter, to 300 μ long. P. scattered, verrucose to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—42× 14—16 μ.

On *Diospyros heudelotii*, Sierra Leone, Deighton 1927 p. p., type; — On *D. mespiliformis*, Gold Coast, Hughes in IMI 43725, 43715; — On *Maba warneckii*, Gold Coast, Hughes in IMI 43346.

(1177) *Meliola diospyri* Syd. var. *yatesiana* (Trott.) Hansf. & Deight., Mycol. Paper, IMI, **23**: 50. 1948.

= *Meliola yatesiana* Trott., in Sacc. Syll. Fung. **24**: 284. 1926.

= *Meliola diospyriae* Yates, Philipp. Journ. Sci., C. Botany, **12**: 364. 1917.

Cols. mostly epiphyllous, to 5 mm. diam., dense, strongly adherent. Hyphae straight, branching usually opposite at wide angles, densely reticulate, cells mostly 16—36×6—9 μ. Ch. almost entirely opposite, antrorse, usually straight, 15—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose, ovate or broadly clavate, entire, straight, 12—16×10—14 μ, broadly rounded at apex. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—20× 9—10 μ. Ms. scattered, few, straight, simple, obtuse to subacute, to 750×10—11 μ. P. not seen. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 46—50×20—21 μ.

On *Diospyros discolor*, Philippines, PBS 25711 (type), Krypt. exs. Mus. Vindobon 2921; — On *D. maritima*, Philippines, Ireland 519 (FLS); — On *D. morrisiana*, Formosa, Yamamoto (USDA).

(1178) *Meliola hirsuta* Hansf. & Deight., Mycol. Paper, IMI **23**: 50. 1948.

Cols. hypophyllous, rarely epiphyllous, thin, black, hirsute, to 15 mm. diam., sometimes confluent. Hyphae crooked on both surfaces, often geniculate, rarely substraight, branching mostly alternate, at wide angles, loosely reticulate, cells 18—50×5—9 μ. Ch. alternate or very rarely opposite, spreading or variously bent, 12—20 μ long; stc. cylindric, 3—10 μ long, bent to tortuous; hc. versiform, usually oblong to subglobose, often bent or tortuous, entire, 7—11×5—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20× 5—7 μ. Ms. very numerous, scattered, straight or slightly bent to

flexuous, not uncinate, obtuse to subacute. simple, to 2170×8—12 μ, those around P. much shorter to about 500 μ long. P. scattered, verrucose. to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—41×13—15×10—12 μ.

On *Diospyros heudelotii*, Sierra Leone, Deighton 1929 (type), 1927, 1928. 1566, 494. 2306, 2361, 2428, 1027, 2101, 2099; — On *D. thomasii*, Sierra Leone, Deighton 391, 2307. 979.

(1179) *Meliola hirsuta* Hansf. & Deight., var. *major* Hansf., Sydowia Beih. **1**: 109. 1957.

Cols. hypophyllous, to 25 mm. diam. or confluent, rather thin, thinly velvety. Hyphae substraight to undulate, loosely reticulate, branching opposite at wide angles, interwoven, cells mostly 25—35× 6—7 μ. Ch. alternate or 1—2% opposite, antrorse or spreading, straight or slightly bent. 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to subclavate. entire, often slightly re-rorse-bent, 10—15×7—9 μ. Mh. few. mixed with ch., opposite or alternate, ampulliform, 18—23×6—7 μ. Ms. fairly numerous, scattered, with shorter ones grouped around P., straight, simple, gradually attenuate to obtuse apex, to 2200×7—10 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—48×16—19×12—14 μ.

On *Diospyros crassiflora*, Kivu, Congo Belge, Hendrickx 3918, type.

Host Family 222. Sapotaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4330	Cols. dense; hyphae straight to undulate; hc. small, cylindric-clavate, entire	*sideroxyli*	(1181)

Asteridiella

3101.3220	Cols. thin; hyphae substraight to undulate; hc. subglobose, entire	*sapotacearum*	(1182)
3101.3220	Cols. very thin; hyphae substraight; hc. elongate ovate, entire	*sapotacearum* var. *longipoda*	(1183)
3101.4320	Cols. ...; hyphae ...; hc. subglobose	*lucumae*	(1184)

Meliola

2111.6321	Cols. thin; hyphae undulate; hc. angulose, very irregular; ms. obtuse	*palaquii*	(1185)
3413.4233	Cols. dense, velvety; hyphae substraight to undulate; hc. globose-oblong, entire; ms. obtuse, to 840 μ; ps. obtuse, to 280 μ	*pradosiae*	(1186)
3113.5233	Cols. thin; hyphae sinuous to crooked; hc. ovate-subglobose, entire or angulose; ms. obtuse	*cryptica*	(1187)
3113.4221	Cols. dense; hyphae substraight; hc. ovate to cylindric, entire; ms. obtuse	*sersalisiae*	(1188)

3113.3213	Cols. thin; hyphae straight to crooked; hc. oblong, entire; ms. obtuse	*sideroxyli*	(1189)
3111.5331	Cols. dense, velvety; hyphae substraight to sinuous; hc. large, angulose to lobate; ms. obtuse	*butyrospermi*	(1190)
3111.4223	Cols. thin; hyphae substraight; hc. oblong to suboconoid, entire; ms. obtuse	*lucumae*	(1191)
3111.4223	Cols. subdense; hyphae undulate to crooked; hc. oblong-piriform or angulose; ms. acute ...	*palaquiicola*	(1192)
3111.4222	Cols. thin; hyphae slightly undulate; hc. ovate-clavate, entire; ms. subacute	*dipholidis*	(1193)
3111.3221	Cols. subdense, velvety; hyphae substraight; hc. subglobose, entire; ms. acute	*snowdenii*	(1194)
3111.3222	Cols. subdense; hyphae substraight to undulate; hc. ovate-oblong, entire; ms. obtuse	*bumeliae*	(1195)

(1180) *Meliola paralabatae* Cif., Ann. Mycol. **31**: 156. 1933.

According to descr. and to the portion of the type collection, Ciferi, Mycofl. doming. exs. 187 in Herb. Kew. this is not a *Meliola*, but is composed of the mycelium and hyphopodia of either *Clypeolella* sp., or *Schiffnerula* sp., and the stray spores of some *Meliola* sp. No mature perithecia were found on this material, so that it is not possible to determine the colonies more accurately.

(1181) *Amazonia sideroxyli* Hansf., Proc. Linn. Soc. London **160**: 128. 1948.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae substraight to undulate, branching close, opposite at wide angles, closely interwoven-reticulate and in parts almost solid, cells mostly 15–20 × 6–7 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 12—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to clavate, entire, widely rounded at apex, 9–12 × 7—9 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—23 × 7—8 μ, neck elongate. P. closely scattered in centre of colony, to 300 μ diam. and about 80 μ high when mature; upper wall radiate, the hyphae 6—7 μ thick and extending at the margin as thinly hyphopodiate fimbriae. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 37—44 × 17—21 μ.

On *Sideroxylon* sp., Philippines, Baker, Fung. malay 509 p. p., type.

(1182) *Asteridiella sapotacearum* Hansf., Sydowia **10**: 50. 1957.
= *Irene sapotacearum* Hansf., Sydowia **9**: 7. 1955.

Cols. epiphyllous, thin, more or less confluent over the leaf. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20–30 × 6–7 μ. Ch. alternate, more or less antrorse, straight, 12—18 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose, entire, 9—13 × 9—11 μ, broadly rounded at apex. Mh. numerous, mixed with ch., opposite or alternate, ampulli-

form, 14—23×6—9 μ. P. on radiate subiculum of exhyphopodiate hyphae, immature, globose, to 110 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×12—15 μ.

On *Sapotaceae* indet., Brazil, Ule, Herb. brasil. 92 p. p., type (S).

(1183) *Asteridiella sapotacearum* Hansf. var. *longipoda* Hansf., Sydowia 10: 50. 1957.

= *Irene sapotacearum* Hansf. var. *longipoda* Hansf., Sydowia 9: 7. 1955.

Cols. epiphyllous, very thin, to 1 mm. diam., mixed with those of the type. Hyphae substraight to slightly undulate, branching usually opposite at wide angles, loosely reticulate, cells mostly 20—45×6—7 μ. Ch. alternate, more or less antrorse, usually straight, 20—27 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. ovate, entire, rounded or often somewhat pointed at apex, 13—17×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—9 μ. P. scattered, each on a subiculum of exhyphopodiate hyphae, immature, globose (to 120 μ diam.) Sp. oblong, obtuse, 4-septate, slightly constricted, 34—39×14—15 μ.

On *Sapotaceae* indet., Brazil, Ule, Herb. brasil. 92 p. p. type (S).

The colonies and hyphopodia are very different from the type, being even thinner to arachnoid, with elongate hyphopodia.

(1184) **Asteridiella lucumae** (Cif. & Frag.) Hansf. comb. n.

= *Irene lucumae* Cif. & Frag., Bol. Real Soc. Espan. Hist. Nat., 27: 324. 1927.

= *Irenina lucumae* (Cif. & Frag.) Cif., Bol. Est. Agron. Moca, B: 14. 75. 1929.

= *Meliola domingensis* Cif., Mycopathologia 7: 122. 1954.

Cols. amphigenous, mostly hypophyllous, to 8 mm. diam. Hyphae ramose-reticulate, 4—6 μ thick. Ch. alternate or loosely scattered; hc. subglobose 12—15 μ diam. or 12×16 μ; stc. cylindric 8—10 μ long. Mh. few, alternate or scattered, 16—22 μ long. Setae none. P. subgregarious, to 100 μ diam. (?immature). Sp. cylindric, obtuse, 4-septate, slightly constricted, 38—43×24—30 μ.

On *Lucuma mammosa*, San Domingo, Ciferri, type.

No specimens have been available to the present writer, who suspects that the spore measurements given above from the original description are incorrect, and that the spore width should read 14—20 μ.

(1186) *Meliola palaquii* Stev. & Rold., Philipp. Journ. Sci. 56: 55. 1935.

Cols. amphigenous, to 6 mm. diam. or confluent, thin. Hyphae substraight to undulate, branching opposite, acute or wide, loosely reticulate, cells mostly 25—45×5—7 μ. Ch. alternate, subantrorse, more or less straight, 25—30 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. irregularly lobate, 17—23×16—23 μ. Mh. few, mixed with ch., alternate, ampulliform, 25—35×7—8 μ. Ms. scattered, irre-

gularly flexuous, not uncinate, simple, obtuse, to 280×5—7 μ, tapering to about 3 μ at apex. P. scattered, slightly verrucose, to 180 μ diam. Sp. fusoid, more or less bent, obtuse, 3-septate, 50—62× 16—22 μ, the central cells larger than the end cells, which are often subconoid.

On *Palaquium* sp.. Philippines, Stevens 1900, type (FLS).

(1186) *Meliola pradosiae* Batista, Univ. do Recife, Inst. de Micol., Publ., **25**: 8. 1956.

Cols. amphigenous, to 10 mm. diam., dense, subvelvety. Hyphae substraight to flexuous, branching opposite at wide angles, closely reticulate, cells mostly 20—25×6—8 μ. Ch. alternate or opposite in varying proportions, more or less antrorse, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to oblong, entire, 12—16×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×6—9 μ. Ms. scattered and grouped around P., straight or slightly bent, simple, obtuse, to 840×8—10 μ. P. scattered, verrucose, to 225 μ diam.; ps. 0—7, erect, straight, simple, obtuse, septate, smooth, to 280×7—10 μ. Sp. oblong, obtuse, 4-septate, constricted, 42—47×16—19 μ.

On *Pradosia lactescens*, Brazil, IMUR 5050, type.

Batista gives the ps. as to 800 μ long, but in the specimen examined by myself, they did not exceed 280 μ, the longer ones arising from mycelial hyphae around the base of the perithecium and not from the wall itself.

(1187) *Meliola cryptica* Hughes, Mycol. Paper, IMI **50**: 34. 1953.

Cols. hypophyllous, thin, to 15 mm. diam. or confluent. Hyphae sinuous, irregularly inflated, branching opposite or irregular at wide angles, interwoven and loosely reticulate, cells 16—40×5—10 μ, sometimes to 20 μ thick. Ch. alternate or opposite in varying proportions, spreading or variously bent, 12—22 μ long; stc. cylindric to cuneate, 2—10 μ long; hc. ovate to subglobose, entire or sometimes angulose and irregular, 7—14×6—13 μ. Mh. few, scattered or aggregate, opposite or solitary, ampulliform, 22—40×7—8 μ, neck elongate. Ms. few, loosely scattered and grouped around P., straight or bent, simple, obtuse to acute, to 560×10—13 μ. P. scattered, verrucose, to 225 diam. Sp. ellipsoid with rounded-attenuate ends, 4-septate, slightly constricted, 46—54×17—20 μ, the middle cell often distinctly the largest.

On *Chrysophyllum albidum*, Gold Coast, IMI 38065; Sierra Leone, IMI 46749.

(1188) *Meliola sersalisiae* Hansf., Proc. Linn. Soc. London **156**: 106. 1944.

Cols. epiphyllous, rather dense, to 3 mm. diam. Hyphae substraight, branching usually opposite at wide angles, rather closely reticulate, cells mostly 20—30×6—8 μ. Ch. mostly opposite, antrorse,

13—20 μ long, substraight; stc. cylindric. 2—5 μ long; hc. clavate to ovate, entire, 10—14×7—9 μ. Mh. numerous, mixed with ch., opposite or alternate, elongate ampulliform. Ms. mostly grouped around P., straight, obtuse, simple, to 250×8—10 μ. P. scattered, verrucose, to 180 μ diam., each on radiate subiculum of hyphopodiate hyphae. Sp. oblong, obtuse, 4-septate, constricted, 37—45×14—17 μ.

On *Sersalisia* sp., Uganda, Hansford 3186 p. p. (type), 3478, 3290.

(1189) *Meliola sideroxyli* Stev., Bull. Bishop Mus. **19**: 35. 1925.

Cols. amphigenous, mostly epiphyllous, 1—3 mm. diam., dense. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 10—20×5—7 μ. Ch. alternate or opposite in varying proportions, subantrorse or spreading, straight or very slightly recurved, 15—20 μ long; stc. cylindric, 3—5 μ long; hc. oblong, entire, 11—15×7—9 μ. Mh. numerous. mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. Ms. few, scattered and grouped around P., straight or somewhat flexuous, simple, obtuse to acute, to 600×9—10 μ. P. scattered. globose, slightly verrucose, to 90 μ diam. (immature). Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—44×17—20 μ.

On *Sideroxylon* sp., Hawaii, Swezey 1160, type (FLS).

(1190) *Meliola butyrospermi* Hansf. & Deight., Mycol. Paper, IMI, **23**: 51. 1948.

Cols. amphigenous, to 7 mm. diam., velvety, dense, strongly parasitic, with the leafspot showing through the leaf. Hyphae substraight to sinuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—30×7—10 μ. Ch. alternate, spreading or antrorse, straight or irregularly bent, 20—32 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. straight or bent, subglobose to irregular, angulose to sublobate, 13—22×12—20 μ. Mh. few, mixed with ch.. alternate or opposite, ampulliform, to 25×8—12 μ. Ms. numerous, scattered, straight, simple, obtuse, to 290×9—12 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 45—50×19—22 μ.

On *Butyrospermum parkii*, Gold Coast, Deighton CB 892, type.

(1191) *Meliola lucumae* Stev., Ill. Biol. Monogr. **2**: 49. 1916.

Cols. amphigenous, to 10 mm. diam., thin. Hyphae substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 15—20×5—7 μ. Ch. alternate, spreading or subantrorse, straight or slightly recurved above, 16—21 μ long; stc. cylindric, 3—5 μ long; hc. oblong to subconoid, apex rounded, entire, 12—16×7—8 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 16—22×6—8 μ. Ms. few, thinly scattered and grouped around P., straight or slightly bent, simple, obtuse, to 800×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 40—44×18—21 μ.

On *Lucuma multiflora*, Porto Rico, Stevens 8596, type, 8164; — On *Chrysophyllum* sp., Porto Rico, Stevens 4731, 4579; — On *C. lucumifolium*, Argentina, SPEG 1830; — On *Lucuma* sp., Argentina, SPEG 1829.

(1192) *Meliola palaquiicola* Hansf., Sydowia **11**: 58. 1958.

Cols. epiphyllous, subdense, to 5 mm. diam. Hyphae undulate to crooked, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—35×7—10 μ. Ch. alternate, subantrorse or spreading, usually bent, 23—30 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. piriform to oblong, often bent, apex from rounded to truncate, sometimes rounded-angulose, versiform, 16—22×10—15 μ. Mh. few, mixed with ch., alternate, conoid, 19—23×9—10 μ. Ms. grouped around P., straight, simple, acute, to 800×11—13 μ. P. scattered, verrucose, to 150 diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—45×18—20 μ.

On *Palaquium* sp., Philippines, Stevens 1884, type (FLS).

(1193) *Meliola dipholidis* Stev., Illionis Biol. Monogr. 2: 512. 1916.

Cols. amphigenous, to 5 mm. diam., rather thin. Hyphae substraight, branching usually opposite, subrectangular, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, usually straight, slightly antrorse, 15—22 μ long; stc. cylindric, 4—6 μ long; hc. clavate, ovate or subglobose, entire, 10—16×7—10 μ. Ms. mostly on separate hyphae, opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. few, scattered, straight or slightly bent, simple, acute, to 400×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—44×18—20 μ.

On *Dipholis salicifolia*, Porto Rico, Stevens 8549 (type), 7265; — On *D. angustifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 173, Ciferri 2835 (S).

(1194) *Meliola snowdenii* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 282. 1937.

Cols. amphigenous and caulicolous, subdense, 1—2 mm. diam., subvelvety. Hyphae substraight to undulate, branching opposite or irregular, acute, closely reticulate, cells mostly 12—20×6—7 μ. Ch. alternate, straight or slightly bent, 20—23 μ long, more or less antrorse; stc. cuneate, 5—8 μ long; hc. subglobose to ellipsoid, entire, 13—16×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered, straight, simple, acute, to 220×8 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—32×12—14 μ.

On *Mimusops* sp., Uganda, Hansford 1383, type.

(1195) *Meliola bumeliae* Hansf., Sydowia **10**: 65. 1957.

Cols. amphigenous, to 5 mm. diam., subdense, often numerous and confluent. Hyphae substraight to undulate, branching opposite at wide angles, becoming closely reticulate, cells mostly 15—25×

5—6 μ. Ch. alternate, antrorse or spreading, straight or slightly bent, 12—15 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. ovateto oblong, entire, 9—12×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—7 μ. Ms. thinly scattered and grouped around P., to 350×6—8 μ, simple, obtuse. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39× 14—16 μ.

On *Bumelia parviflora*, Florida, Tracy 7268, type (CUP).

Host Family 223. Myrsinaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4230	Cols. dense, crustose; hyphae undulate; hc. subglobose to ovate, entire	*peregrina*	(1196)
3101.6340	Cols. dense, crustose; hyphae undulate; hc. globose-clavate, entire	*suttoniae*	(1197)

Irenopsis

3401.5320	Cols. dense; hyphae substraight to flexuous; hc. subglobose-cylindric, entire; ps. 1—5, obtuse, to 90 μ long	*parathesicola*	(1198)

Asteridiella

3103.5320	Cols. dense, crustose; hyphae substraight; hc. large, globose-clavate, entire to sublobate	*miriapoda*	(1199)
3101.5320	Cols. dense; hyphae substraight to sinuous; hc. crenate to deeply lobate	*theisseniana*	(1200)

Meliola

31⅓3.4222	Cols. dense, subvelvety; hyphae undulate to substraight; hc. ovate-cylindric, entire; ms. acute or 2—5-dentate to 8 μ	*maesicola*	(1201)
3123.5222	Cols. dense, velvety; hyphae substraight to crooked; hc. subglobose-piriform, entire; ms. arcuate to hamate, obtuse	*biegensis*	(1202)
3113.5333	Cols. dense, velvety; hyphae substraight to flexuous; hc. ovate-clavate, entire or angulose; ms. acute	*transvaalensis* var. *afrardisiae*	(1203)
3113.5233	Cols. dense, velvety; hyphae substraight to tortuous; hc. subglobose-ovate, entire; ms. acute or obtuse	*cybianthis*	(1204)
3113.5223	Cols. dense, velvety; hyphae undulate; hc. ovate, entire; ms. acute	*rapaneae*	(1205)
3113.5233	Cols. subdense; hyphae substraight; hc. cylindric-clavate, entire; ms. obtuse	*myrsinacearum*	(1206)
3113.4231	Cols. dense, velvety; hyphae straight to flexuous; hc. globose-piriform, entire; ms. acute	*fructicola*	(1207)
3113.4224	Cols. dense, subvelvety; hyphae straight or undulate; hc. ovate or subangulose; ms. obtuse to subacute	*yaquensis*	(1208)

3113.4222	Cols. dense, velvety; hyphae substraight to undulate; hc. globose-ovate, entire; ms. acute or obtuse	*groteana*	(1209)
3113.4222	Cols. thin to dense, subvelvety; hyphae substraight; hc. small, globose; ms. acute	*groteana* var. *ardisiicola*	(1210)
3113.4233	Cols. dense; hyphae crooked; hc. large, ovate-clavate, entire; ms. obtuse or acute	*transvaalensis*	(1211)
3111.5321	Cols. thin; hyphae substraight; hc. oblong-clavate, entire; ms. acute	*armata*	(1212)
3111.5223	Cols. thin to subdense; hyphae substraight; hc. subglobose, entire; ms. acute	*ardisiae*	(1213)
3111.4221	Cols. thin to subdense; hyphae sinuous to crooked; hc. small, globose-ovate, entire; ms. acute, often torulose near apex	*delicatula*	(1214)
3111.3223	Cols. thin, subvelvety; hyphae crooked; hc. globose, entire; ms. acute	*discocalycis*	(1215)
3113.4221	Cols. dense, minute; hyphae straight; hc. globose-ovate, entire; ms. acute or subacute	*agnolae-mariae*	(1216)

Doubtful species: *Asteridiella parathesiana* (1217)
Meliola sphaeropoda (1218)

(1196) *Amazonia peregrina* Syd., Ann. Mycol. **15**: 238. 1917.
= *Meliola peregrina* Syd., Philipp. Journ. Sci., C. Botany, **8**: 479. 1913.

Cols. epiphyllous, to 2 mm. diam., crustose, very dense, smooth. Hyphae slightly undulate, branching alternate or unilateral, acute, densely radiating-reticulate and almost solid, cells mostly 12—20 × 7—8 μ. Ch. alternate, closely crowded, antrorse, straight or slightly bent, 15—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate, entire, 9—12 × 8—10 μ. Mh. few, mixed with ch., alternate, ampulliform. P. in central group, flattened-globose, covered by a layer of radiate mycelial hyphae, to 320 μ diam. and to 100 μ high in centre. Sp. oblong, obtuse, strongly constricted, 4-septate, 39—46 × 14—18 μ.

On *Maesa* sp., Philippines, PBS 20255, type; — On *M. denticulata*, Philippines, Clemens 1234 (F); — On *M. lanceolata*, Uganda, Hansford 1301, 1356, 1416, 1754, 2129, 3030, 2907, 3192, 3350, 3630; — On *M. lata*, Philippines, PBS 29808; — On *M. laxa*, Philippines, PBS 35889, Stevens 1177, 1453, 1432, 1197, 70, 1928, 1162 (FLS); — (On *M. formosana*, Formosa, Yamamoto not seen by the present writer.)

(1197) *Amazonia suttoniae* (Stev.) Hansf., Sydowia **9**: 28. 1955.
= *Actinodothis suttoniae* Stev., Bull. Bishop Mus. Honolulu, **19**: 51. 1925.

Cols. hypophyllous, dense and crustose, to 1 mm. diam. Hyphae substraight to flexuous, cells mostly 10—15 × 7—9 μ, branching close, alternate or irregular, acute, densely radiating-reticulate and solid.

Ch. alternate or more scattered, closely antrorse, straight or bent, 14—22 μ long; stc. cylindric to cuneate, 2—8 μ long; hc. entire, globose to oblong with rounded apex, 10—16×8—14 μ. Mh. very few, mixed with ch., alternate, ampulliform, 15—20×7—8 μ. P. few, flattened-globose beneath a radiate covering layer of mycelium, with irregular central apical pore, to 500 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 53—61×21—24 μ.

On *Suttonia lessertiana*, Hawaii, Stevens 143 (type), 1088, 471, 980, 882, 1152, 1032 (F, FLS); Forbes 267 (FLS).

(1198) *Irenopsis parathesicola* Stev., Ann. Mycol. **25**: 435. 1927.
= *Meliola parathesicola* Stev., Illinois Biol. Monogr. **2**: 24. 1916.

Cols. hypophyllous, to 2 mm. diam. very dense. Hyphae substraight to flexuous, branching opposite or irregular at wide angles, densely reticulate and almost solid, cells mostly 12—18×8—10 μ. Ch. alternate, spreading, straight or variously bent, 17—24 μ long; stc. cylindric, 2—7 μ long; hc. globose, clavate or seometimes angulose where crowded, 12—19×11—17 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 15—20×7—8 μ. P. in central group, verrucose, to 160 μ diam.; surface cells conoid, with 1—5 growing out into setae; ps. straight, dark brown, 1—2-septate, obtuse, smooth, the tips crooked to twisted, not uncinate, to 90×6—8 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 44—51×20—22 μ.

On *Parathesis serrulata*, Porto Rico, Stevens 8192, type 8941, 8204, 3651, 7286, 3644 (FLS).

(1199) *Asteridiella miriapoda* (Cif.) Hansf., Sydowia **10**: 49. 1957.
= *Irene miriapoda* (Cif.) Hansf., Sydowia **9**: 34. 1955.

Cols. amphigenous, crustose, solid, to 10 mm. diam., easily secendent, scattered or sometimes confluent. Hyphae substraight, cells mostly 10—15×7—10 μ, branching opposite or irregular, close, at wide angles, very densely reticulate and becoming solid. Ch. alternate or about 2% opposite, spreading or antrorse, straight or bent, 15—28 μ long; stc. cylindric to cuneate, 2—14 μ long; hc. globose and entire ta variously angulose or lobate. straight or bent, 10—18×8—17 μ. Mh. few. mixed with ch., opposite or alternate, ampulliform, 16—20×7—9 μ. P. globose, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 48—52×22—24 μ.

On *Wallenia laurifolia*, San Domingo, Ciferri 2893, type (S), Ciferri 3346, Mycofl. doming. exs. 225 (F).

(1200) *Asteridiella theisseniana* Hansf., Sydowia 10: 60. 1957.

Cols. epiphyllous, dense, to 3 mm. diam. Hyphae substraight, to sinuous, branching opposite or irregular, acute, closely reticulate and becoming nearly solid, cells mostly 15—30×8—11 μ. Ch. alternate, antrorse, substraight, 20—40 μ long; stc. cuneate, 5—10 μ long; hc. versiform, irregularly crenate to deeply and irregularly lobed, 20—30×13—22 μ. Mh. mixed with ch., opposite or alternate, ampulli-

form, 22—28×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 50—59×25—30 μ.

On *Myrsine* sp., Brazil, Theissen s. n., type (F).

(1201) *Meliola maesicola* Hansf. & Stev., Journ. Linn. Soc. London **51**: 277. 1937.

Cols. hypophyllous, dense, to 8 mm. diam., often elongated along the veins, subvelvety. Hyphae undulate, branching usually opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate or opposite, subantrorse or spreading, straight or variously bent, mostly 15—21 μ long; stc. cylindric to cuneate, 3—5 μ; hc. ovoid to short cylindric, straight or slightly bent, entire, 12—16×8—9 μ. Mh. often separate, sometimes mixed with ch., opposite or alternate, ampulliform, 14—22×7—9 μ. Ms. numerous, scattered and grouped around P., straight, to 420×7—8 μ, simple and acute or 2—5-dentate to 8 μ. P. subaggregate in centre of colony, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 41—48×15—17 μ.

On *Maesa* sp., Uganda, Hansford 758, type.

(1202) *Meliola biegensis* Hansf., Sydowia Beih. **1**: 100. 1957.

Cols. amphigenous, to 2 mm. diam., dense, velvety. Hyphae substraight to crooked, branching opposite, acute, densely reticulate and almost solid, cells mostly 15—25×6—7 μ. Ch. alternate or opposite, antrorse, bent or straight, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to piriform, entire, 10—14×8—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform 15—20×6—8 μ. Ms. numerous, scattered, to 320 μ long, simple, obtuse, hamate, bent, arcuate or rarely almost straight, 9—11 μ thick below, slightly attenuate upwards to apex. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, often slightly bent, 47—56×13—15×12—13 μ.

On *Maesa rufescens*, Congo Belge, Hendrickx 3599, type.

(1203) *Meliola transvaalensis* Doidge var. *afrardisiae* Hansf., Proc. Linn. Soc. London **158**: 36. 1946.

Cols. amphigenous, dense, velvety, to 5 mm. diam. Hyphae undulate to crooked, branching usually opposite at wide angles, densely reticulate and often almost solid in centre, cells mostly 15—20×8—10 μ. Ch. alternate or opposite in varying proportions, spreading or antrorse, straight or variously bent, 19—26 μ long; stc. cylindric, 5—10 μ long; hc. ovate to clavate, entire, angulose or rarely sublobate, rounded or truncate above, 12—18×8—10 μ, neck elongate. Ms. few to numerous, scattered and grouped around P., straight, simple, subacute to acute, to 800×10—13 μ, gradually attenuate upwards. P. scattered or in a central group, verrucose, to 270 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 53—60×18—23×15—18 μ.

On *Afrardisia dentata*, Congo Belge, Hendrickx 2532, type.

(1204) *Meliola cybianthis* Toro in Chardon & Toro, Monogr. Univ. Porto Rico, B: 2: 119. 1934.

Cols. mostly hypophyllous, to 8 mm. diam., dense, velvety. Hyphae substraight to undulate or tortuous, branching opposite or irregular, at wide angles, closely radiating-reticulate, cells mostly 20—30 / 7—8 μ. Ch. alternate or about 5% opposite, antrorse or spreading, straight or bent, 14—18 μ long; stc. cylindric, 3—6 μ long; hc. subglobose to ovate, entire, 9—14 × 8—11 μ. Mh. not seen. Ms. numerous, scattered, straight, simple, acute to obtuse, to 650 × 8—10 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—55 / 17—19 μ, the central cell often slightly the largest.

On *Cybianthus brownei*, Venezuela, Chardon & Toro 689, type (CUP).

(1205) *Meliola rapaneae* Syd., Ann. Mycol. 26: 87. 1928.

Cols. hypophyllous, dense, velvety, to 20 mm. diam. or widely confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, densely reticulate, cells mostly 15—25 × 6—8 μ. Ch. alternate or to 15% opposite, spreading or antrorse, straight or slightly bent, 15—25 μ long; stc. cylindric, 4—10 μ long; hc. ovate, piriform or clavulate-cylindric, entire, straight or bent, 10—17 / 8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20 / 7—8 μ. Ms. numerous, scattered, straight, simple, acute, to 900 / 10—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—54 × 18—20 μ.

On *Rapanea umbellulata*, British North Borneo, Elmer 20072, type (BO).

(1206) *Meliola myrsinacearum* Stev., Illinois Biol. Monogr. 2: 40. (3113.5233)

Cols. amphigenous, mostly epiphyllous, to 10 mm. diam. or confluent, moderately dense. Hyphae substraight, branching usually opposite at wide angles, closely reticulate in centre, cells mostly 20—30 / 8—10 μ. Ch. alternate or to about 2% opposite, straight or bent, spreading or antrorse, 20—30 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. cylindric or subclavate, entire, 15—22 × 10—14 μ, often bent. Mh. few, mixed with ch., opposite or alternate, ampulliform, 20—25 / 8—10 μ, neck elongate. Ms. fairly numerous in old colonies, often none in younger, straight, simple, obtuse, to 700 × 9—11 μ, scattered. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—52 × 17—19 μ.

On *Ardisia guadelupensis*, Porto Rico, Stevens 7576 (type), 7057; — On *A.* sp., Costa Rica, Stevens 65 (FLS); — On *Myrsinaceae* indet., Porto Rico, Stevens 8905, 3681.

(1207) *Meliola fructicola* Hansf., Sydowia **10**: 73. 1957.

Cols. dense, velvety, to 1 mm. diam. or numerous and confluent, on fruits and peduncles only. Hyphae straight to flexuous, branching opposite or irregular, acute, closely reticulate, cells mostly 13—30× 5—8 μ. Ch. opposite or alternate, more or less antrorse, 12—21 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. globose to short piriform, entire, 10—14×9—12 μ. Mh. not seen. Ms. numerous, straight, simple, acute, to 300×9—10 μ. P. numerous, subaggregate, slightly verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 37—44×12—15 μ.

On *Maesa* sp., British North Borneo, Clemens 29594-a, type.

(1208) *Meliola yaquensis* Petr. & Cif., Ann. Mycol. **30**: 202. 1932.

Cols. hypophyllous, rarely amphigenous, to 6 mm. diam. or cinfluent, dense, subvelvety. Hyphae substraight to undulate, 6—9 μ thick, densely branched and reticulate. Ch. mostly opposite, stc. cylindric, 4—7 μ long; hc. wide ovate to ellipsoid, entire or subangulose, rounded to truncate above, 12—15×9—12 μ. Mh. few, lageniform, 16—20×6—8 μ. Ms. numerous, straight to slightly arcuate above, simple, obtuse to subacute, to 1000×8—10 μ. P. scattered, smooth, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—44×14—17 μ.

On *Wallenia* sp., San Domingo, Ciferri 4028, type (not seen by the present author).

(1209) *Meliola groteana* Syd., Ann. Mycol. **11**: 402. 1913.

= *Meliola maesae* Rehm, Philipp. Journ. Sci., C. Botany, 8: 392. 1913.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., velvety, dense. Hyphae substraight to sinuous, branching opposite at wide angles, closely reticulate, cells mostly 20—25×7—8 μ. Ch. opposite or alternate, somewhat antrorse, 12—17 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. globose to wide ovate, entire, 9—14×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25× 7—9 μ. Ms. numerous, scattered, straight, simple, acute or less commonly obtuse, to 320×7—9 μ. P. scattered, slightly verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—48×13—16 μ.

On *Maesa* sp., Tanganyika, Grote, type (S); Sydow, Fung. exot. exs. 247; — On *Maesa lanceolata*, Uganda, Hansford 1173, 1349, 1356, 1988, 1754, 2129, 2443, 3030, 3350; Sierra Leone, Deighton 2441; — On *Maesa laxa*, Philippines, Baker 718 (type of *M. maesae*), 699, 2882 (S); Stevens 1427, 1580 (FLS); Rehm, Ascomyc. 1757, 2105; — On *M. rufescens*, Congo Belge, Hendrickx 3302.

(1210) *Meliola groteana* Syd. var. *ardisiicola* Hansf., Sydowia **9**: 18. 1955.

Cols. epiphyllous, each on a dark reddened leafspot, thin to subdense, to 4 mm. diam. or confluent. Hyphae substraight, branching

opposite at acut or wide angles, loosely reticulate, becoming closer in older colonies, cells mostly 20—35×6—7 μ. Ch. about 80% opposite, subantrorse, straight, 9—13 μ long; stc. cylindric, 2—4 μ long; hc. globose, entire, 8—11 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 12—16×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 330×9—11 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 35—42×13—14×11—12 μ.

On *Ardisia perrottetiana*, Philippines, Baker, Fung. malay. 254 (K, S), type.

(1211) *Meliola transvaalensis* Doidge, Bothalia 2: 238. 1928.

Cols. amphigenous, to 5 mm. diam., dense. Hyphae substraight, branching usually opposite at wide angles, densely reticulate, cells mostly 16—20×7—10 μ. Ch. opposite or to 50% alternate, spreading or antrorse, straight or slightly bent, 15—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to oblong, entire, 11—16×9—13 μ. Mh. rare, mixed with ch., ampulliform, 16—23×6—7 μ, mostly alternate. Ms. mostly grouped around P., straight, simple, acute to subacute when fully mature, to 650×10 μ. P. in central group, verrucose, to 290 μ diam., surface cells rounded to obtuse conoid. Sp. oblong to subellipsoid, obtuse, slightly constricted, 4-septate, 44—50× 16—19 μ.

On *Myrsine africana*, South Africa, PRET 17746, type.

(1212) *Meliola armata* Speg., Bol. Acad. Nac. Cienc. Cordoba, **11**: 381. 1889.

= *Irenopsis armata* (Speg.) Stev., Ann. Mycol. **25**: 437. 1927.

Cols. epiphyllous, 3—5 mm. diam., thin. Hyphae substraight to slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 25—35×6—8 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 26—35 μ long; stc. cylindric to cuneate, 7—10 μ long; hc. oblong to clavulate, entire, straight or slightly bent, 18—25× 8—12 μ. Mh. separate, opposite or alternate, ampulliform, 16—22× 6—8 μ. Ms. grouped around P., straight, simple, acute, to 220×7—8 μ. P. scattered, glabrous, slightly verrucose, to 180 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 45—53×20—22 μ.

On ? *Myrsine* sp., Brazil, Puiggari 2381, 2382 (SPEG 540, type).

Stevens was in error in making his transfer to *Irenopsis*, as the setae do not arise from the wall of the perithecium, but from hyphae around the base, as in many other species of *Meliola*.

(1213) *Meliola ardisiae* Syd., Leafl. Philipp. Bot., **9**: 3116. 1925.

Cols. amphigenous, thin to subdense, thinly velvety, to 2 mm. diam. or confluent. Hyphae substraight, branching opposite at wide angles, loosely to closely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, subantrorse or spreading, often bent, 13—19 μ long; stc. cylindric, 2—6 μ long; hc. subglobose, entire, 10—14×9—12 μ.

Mh. mixed with ch., opposite or alternate, ampulliform to conoid, 18—25×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 650×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to ellipsoid, ends obtusely attenuate, 4-septate, constricted 42—50×13—15 μ.

On *Ardisia jagorii*, Philippines, Elmer 17327, type (FLS); — On *A. japonica*, Japan, Yoshinaga s. n., 1901 (S); — On *A. humilis*, Java, BO 12577 p. p.; — On *A.* sp., Java, BO 12390.

The Japanese collection by Yoshinaga differs somewhat from the type in having up to 5% opposite ch., with larger hc. 12—17× 10—14 μ, and larger spores, 48—53×19—21 μ. Further collections may establish this as a distinct variety.

(1214) *Meliola delicatula* Speg., Anal. Soc. Cienc. Argentina, **26**: 63. 1888.

Cols. hypophyllous, to 10 mm. diam., subdense, velvety. Hyphae flexuous, branching opposite or irregular, at wide angles, loosely to closely interwoven-reticulate, cells mostly 20—30×5—6 μ. Ch. alternate or more scattered, less than 1% opposite, straight or bent, 11—17 μ long; stc. cylindric, 3—6 μ long; hc. globose, ovoid or oblong, entire, 7—13×6—10 μ. Mh. mixed ch., usually solitary, ampulliform, few, 14—18×7—8 μ. Ms. scattered, straight, simple, acute, to 220×7—8 μ, attenuate upwards and subtorulose beneath the apex. P. in central group, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—45×13—15×11—13 μ.

On *Myrsine* sp., Paraguay, Balansa 3985, type (K, P. SPEG).

(1215) *Meliola discocalycis* Stev. ex Hansf., Sydowia Beih. **1**: 106. 1957.

Cols. amphigenous, thin, to 3 mm. diam., subvelvety. Hyphae crooked, especially on lower surface of leaf, branching irregular or opposite, loosely interwoven-reticulate, cells mostly 20—30×6—7 μ. Ch. alternate or more scattered, subantrorse, usually straight, 15—19 μ long; stc. cuneate, 3—6 μ long; hc. globose, entire, 10—15×9—13 μ. Mh. separate, alternate or unilateral, ampulliform, 15—20×6—7 μ. Ms. scattered and grouped around P., straight or flexuous, simple, acute to subacute, to 650×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subfusoid, obtuse, often bent, 4-septate, slightly constricted, 33—39×12—14×10—11 μ.

On *Discocalyx cymbianthoides*, Philippines, PBS 25057, type (FLS).

(1216) *Meliola agnolae-mariae* Cif., Mycopathologia **7**: 91. 1954.

Cols. few, poorly developed, not confluent, 0.2—1.0 mm. diam., dense, adherent. Hyphae densely interwoven, straight, 12—14 μ thick, branching opposite at wide angles. Ch. alternate or opposite, crowded, spreading or slightly antrorse, 18—25 μ long, straight or slightly bent; stc. cylindric, 2—5 μ long; hc. globose, ovate or ellipsoid, 16—2× 14—18 μ, entire. Mh. rare, conoid to ampulliform, mixed with ch.,

opposite or alternate, 21—25×14 μ. Ms. few, scattered, straight, to 500×15 μ, 10—12 μ thick at apex (? base), acute to subobtuse. P. globose, nearly smooth, scattered, to 120 μ diam. Sp. ellipsoid, ovate or cylindric, 4-septate, constricted, obtuse, 39—47×18—20 μ.

On *Jacquinia eggersii*, San Domingo, Ekman 16018, type.

No specimens have been available to the present author, and the above description is adapted from Ciferri, l. c.

(1217) *Asteridiella parathesiana* (Cif.) Hansf., Sydowia **10**: 19. 1957.

= *Meliola (Irenina. parathesiana* Cif., Mycopathologia **7**: 169. 1954.

Cols. amphigenous, very black, confluent, to 4 mm. diam. Hyphae few, little branched, septate, irregular, 7—9 μ thick. Ch. entire or subentire, stc. 3.5—7 μ long, hc. globose, 19—26×15—23 μ. Mh. not seen. P. black, glabrous, to 180 μ diam. Sp. 4-septate, slightly constricted, ends rounded, 35—42×20—24 μ.

On *Parathesis serrulata*, San Domingo, Ekman 2884, type.

Ciferri suggests that this form with glabrous perithecia may be identical with *Irenopsis parathesicola* Stev., and that the absence of setae may be due to overgrowth and parasitism by other fungi. No specimens have become available to the present writer, and the above description is that of Ciferri.

(1218) *Meliola sphaeropoda* Cif., Ann. Mycol. **36**: 222, 1938.

According to the description, and to the portion of the type (Ciferri, Mycofl. doming. exs. 226) in Herb. Kew, this consists of the mycelium of either *Schiffnerula* or *Clypeolella*, not bearing mature perithecia, combined with the spores of some foreign Melioline. Unless other parts of the type show *Meliola* colonies to be present, the species is to be deleted.

Host Family 224. Styraceae.

Synopsis of accepted species of *Meliolineae:*

Appendiculella

2201.5230	Cols. dense; hyphae straight to undulate; hc. lobate; app. 4—10, obtuse, to 120 μ	*styracicola*	(1219)
2201.4230	Cols. thin; hyphae undulate; hc. lobate; app. 5—12, obtuse, bent, to 60 μ	*styracicola* var. *minor*	(1220)

Asteridiella

3101.6330	Cols. thin; hyphae crooked; hc. entire to sublobate	*styracicola*	(1221)
3101.5340	Cols. thin; hyphae crooked; hc. angulose to irregularly lobate	*aberrans*	(1222)

Meliola

31⅓3.4231	Cols. dense, crustose, velvety; hyphae undulate; hc. globose, entire; ms. obtuse or 2—3-dentate	*alniphylli*	(1223)

3113.4233	Cols. dense, subcrustose; hyphae straight; hc. oblong-ellipsoid, entire; ms. obtuse	*styracis*	(1224)
3112.3212	Cols. thin; hyphae straight; hc. cylindric to ovate, entire; ms. obtuse	*styracearum*	(1225)
3111.3223	Cols. subdense; hyphae substraight; hc. ovate-oblong, entire; ms. obtuse	*styracina*	(1226)
3111.3221	Cols. thin; hyphae substraight; hc. globose, entire; ms. obtuse to subacute	*kweichowensis*	(1227)

(1219) **Appendiculella styracicola** (Yamam.) Hansf., comb. n.

= *Irene styracicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 49. 1941.

Cols. epiphyllous, minute, loosely scattered, subdense, to 2 mm. diam. Hyphae straight or slightly undulate, branching opposite or irregular, rather densely reticulate, cells 18—30×7—9 μ. Ch. alternate, irregularly clavate, straight or slightly bent; stc. cuneate, 8—16 μ long; hc. irregularly 2—3-lobate, 14—21×14—21 μ. Mh. not numerous, mixed with ch., alternate or solitary, ampulliform, 16—23×7—8 μ. P. in central group, verrucose, to 250 μ diam.; app. 4—10, larviform, often slightly bent, obtuse, rigid, 62—120×23—28 μ at base. Sp. oblong to subellipsoid, obtuse, slightly bent, 3-septate, constricted, 44—53×14—19 μ.

On *Styrax formosanum*, Formosa, Yamamoto, type (not seen by the present writer).

(1220) *Appendiculella styracicola* (Yamam.) Hansf. var. **minor** Hansf., comb. n.

= *Irene styracicola* Yamam. var. *minor* Hansf., Farlowia **3**: 269. 1948.

Cols. epiphyllous, on pale red-brown leafspots, to 1 mm. diam. or confluent. Hyphae undulate, branching opposite or irregular, at wide angles, loosely reticulate, cells 20—30×6—7 μ. Ch. alternate, straight or bent, spreading to antrorse, 16—35 μ long; stc. cylindric to cuneate, 4—20 μ long; hc. rarely ovate and entire, usually 3—4-angulose to sublobate, 12—17×11—18 μ. Mh. few, mixed with ch., alternate, ampulliform, 14—20×6—8 μ. P. in loose central group, verrucose, to 220 μ diam.; app. 5—12, suberect, larviform, 40—60×20—30 μ thick at base, attenuate to obtuse, hamate apex, wall thin, brown, transversely striate, apparently not septate. Sp. bent ellipsoid, obtuse, 3-septate, constricted, 38—44×12—15 μ.

On *Styrax benzoin*, China, Cheo 180 p. p., type (F).

(1221) *Asteridiella styracicola* (Speg.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola styracicola* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 44. 1912.

Cols. hypophyllous only, with usually only the perithecia showing above the leaf-scales, thin, smooth. Hyphae below the leaf-scales,

crooked and often in strands of 2—6, becoming almost solid in centre, branching alternate or irregular, acute, cells mostly 20—40×5—10 μ, often geniculate-torulose. Ch. alternate or scattered, sometimes in groups of 3—5 from different hyphae, antrorse or spreading, 13—23 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. versiform, straight or bent, irregularly rounded, angulose or sublobate, 10—19×8—15 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—25×6—8 μ. P. scattered, rough, to 280 μ diam., surface cells often produced into outgrowths to 35 μ high by 15 μ diam. at base, obtuse, usually coherent into tubercles up to 50 μ diam., sometimes striate and pale brown, smooth on surface. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 58—68×20—26×18 μ.

On *Styrax lanosa*, Argentina, Venturi in SPEG 513, type; SPEG 503, 517, 16958 p. p.; — On *S.* sp., Costa Rica, Stevens 73, p. p. (FLS).

(1222) **Asteridiella aberrans** (Stev.) Hansf., comb. n.

= *Meliola tomentosa* Wint. var. *calva* Rehm, Ann. Mycol. 5: 209. 1907.

= *Irenina aberrans* Stev., l. c., **25**: 462. 1927.

Cols. hypophyllous, thin, smooth, almost completely hidden by the scales of the leaf tomentum, to 3 mm. diam. Hyphae crooked, irregularly branched, creeping over, between and beneath the leaf scales, often fasciculate, loosely reticulate, cells mostly 25—30×4—7 μ. Ch. alternate, crooked, 18—25 μ long; stc. cylindric, 5—10 μ long; hc. irregularly lobate to angulose, 13—17×7—10 μ. Mh. not seen. P. scattered, formed on raised hyphae of the mycelium above the leaf tomentum, verrucose, to 330 μ diam., surface cells obtusely conoid, to 15 μ high, or sometimes forming tubercles of several cells, and then to 35 μ high. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 53—59×22—25 μ, the middle cell often slightly the largest.

On *Styrax* sp., Brazil, Rehm, Ascomyc. 1707, type.

Stevens' slides from the type show many oblong spores 39—44× 14—18 μ, germinating by two, more or less regular oblong hyphopodia; these are foreign, but were described by Stevens as those of *A. aberrans*. Confusion has arisen in the distribution of Rick, F. austro-amer. 67 and 67a; some specimens are *A. aberrans* on *Styrax*, while others are *A. winteri* on *Solanum*.

(1223) *Meliola alniphylli* Yamam., Trans. Nat. Hist. Soc. Formosa **30**: 418. 1940.

Cols. mostly epiphyllous, dense, velvety, subcrustose, to 3 mm. diam. Hyphae substraight to undulate, branching opposite or irregular, at wide angles, closely reticulate, cells mostly 18—25×7—9 μ. Ch. opposite or alternate, subantrorse, straight or slightly bent, 13—23 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. subglobose, entire

10—14×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—21×7—12 μ. Ms. numerous, scattered, straight or slighty bent, simple, obtuse, to 300×9—12 μ, rarely 2—3-dentate to 10 μ. P. in central group, verrucose, to 210 μ diam. Sp. oblong, 4-septate, constricted, 37—45×14—17×13—14 μ.

On *Alniphyllum pterospermum*, Formosa, Yamamoto, type (USDA).

(1224) *Meliola styracis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 228. 1941.

Cols. epiphyllous, dense, subcrustose, to 5 mm. diam. Hyphae straight, branching opposite, densely reticulate, cells mostly 14—25×7—9 μ. Ch. mostly opposite, crowded; stc. 2—5 μ long; hc. oblong to ellipsoid, entire, 9—15×8—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—25×9—10 μ. Ms. not numerous, mostly around P., simple, straight or slightly curved, attenuate to obtuse apex, to 600×9—10 μ. P. crowded, verrucose, to 240 diam. Sp. oblong, obtuse, 4-septate, constricted, 37—48×13—18 μ.

On *Styrax suberifolius*, Formosa, Yamamoto, type (not seen by present writer).

(1225) *Meliola styracearum* Stev., Ann. Mycol. **26**: 229. 1928.

Cols. epiphyllous, thin, to 10 mm. diam. Hyphae straight, branching opposite, acute, loosely reticulate, cells mostly 20—30×6—8 μ. Ch. opposite, slightly antrorse, usually straight, 15—20 μ long; stc. cylindric, 3—4 μ long; hc. cylindric to ovate, entire, 14—18×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—24×6—9 μ. Ms. few, simple, straight, obtuse, to 310×7—8 μ. P. scattered, smooth, to 90 μ diam., each on a radiate disc, immature. Sp. oblong, obtuse, 4-septate, constricted, 33—37×13—15 μ.

On *Styrax argentea*, Costa Rica, Stevens 105 (type), 73 (FLS).

(1226) *Meliola styracina* Hansf., Sydowia **10**: 91. 1957.

Cols. epiphyllous only, subdense, to 1 mm. diam. or numerous and confluent, sometimes subvelvety. Hyphae substraight, branching opposite, acute, becoming closely reticulate, cells mostly 12—18×6—7 μ. Ch. alternate only, antrorse, straight or slightly bent, 15—23 μ long; stc. cuneate, 3—7 μ long; hc. ovate to oblong, entire, 12—17×7—9 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 18—28×7—9 μ. Ms. scattered, few to numerous, straight, simple, obtuse, to 550×9—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—40×14—15 μ.

On *Styrax leprosa*, Argentina, SPEG 16958 p. p., type.

(1227) *Meliola kweichowensis* Hansf., Farlowia **3**: 277. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent. Hyphae substraight, branching opposite at wide angles, loosely reticulate, cells mostly 20—25×4.5—6 μ.Ch. alternate, more or less antrorse, usually straight, 10—13 μ long; stc. cylindric to cuneate, 2—5 μ

long; hc. globose, entire, 8—10 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, more or less bent, 13—18×6—8 μ. Ms. almost entirely grouped around P., straight, simple. obtuse to subacute, to 280×8 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—36×11—13 μ.

On *Styrax benzoin*, China, Cheo 180 p. p. (F, type).

Host Family 225. Symplocaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

2101.5330	Cols. subdense; hyphae straight; hc. large, subglobose-piriform, entire	*singalensis*	(1228)
3101.4230	Cols. very thin; hyphae straight to undulate; hc. irregularly sinuous-ovoid	*fidelis*	(1229)

Meliola

31⅓1.4333	Cols. thin; hyphae straight to undulate; hc. oblong, ovate or irregular; ms. acute or 2—3-dentate to 12 μ	*symplocacearum*	(1230)
3131.4223	Cols. thin, subvelvety; hyphae undulate; hc. oblong to slightly irregular; ms. 2—3-dentate to 30 μ or cristate	*symplocicola*	(1231)
3111.4323	Cols. thin; hyphae substraight to undulate; hc. cylindric, entire; ms. acute	*symplocicola* var. *chinensis*	(1232)
3111.5233	Cols. thin, subvelvety; hyphae straight to undulate; hc. irregularly lobate; ms. obtuse	*symploci*	(1233)

(1228) *Asteridiella singalensis* Hansf., Sydowia **10**: 50. 1957.
= *Irenina singalensis* Hansf., Proc. Linn. Soc. London 165: 169. 1955.

Cols. epiphyllous, rarely amphigenous, to 1 mm. diam. or widely confluent, subdense. Hyphae straight, branching opposite at wide angles, becoming dense in the centre, cells mostly 25—40×8—10 μ. Ch. alternate, more or less antrorse, substraight, 25—35 μ long; stc. cylindric to cuneate, 8—15 μ long; hc. subglobose to piriform, entire, 16—22×12—18 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform, 25—35×9—11 μ, neck elongate. P. scattered, verrucose, to 300 μ diam., surface cells conic and sometimes extended into acute conic processes to 35 μ high, straight or slightly bent, opaque dark brown. Sp. ellipsoid, ends slightly attenuate, rounded, 3-septate, slightly constricted, usually bent, 50—58×19—23 μ.

On *Symplocos* sp., Ceylon, Thwaites 434 (K, S), type.

(1229) *Asteridiella fidelis* (Toro) Hansf.. Sydowia **10**: 48. 1957.

Cols. epiphyllous, to 2 mm. diam., thin to subdense, smooth. Hyphae undulate, branching opposite or irregular, acute, closely

reticulate, cells mostly 20—30×8—9 μ. Ch. alternate, antrorse or spreading, straight or usually bent, 20—28 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. oblong to clavate, often bent to sinuous, margin crenate to lobate, 15—20×10—15 μ. Mh. separate, opposite or alternate, ampulliform, 15—20×8—9 μ. (P. loosely scattered, verrucose, to 315 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—48×18—20 μ. — Toro.)

On *Symplocos theiformis*, Colombia, Chardon 767, type (USDA); — On *S.* sp., Philippines, PBS 23727 p. p. (FLS).

In the portion of the type in USDA no perithecia now remain; the description of these and the spores above is that of the original by Toro. The determination of the Philippine specimen is doubtful, as no spores were found in the author's mounts.

(1230) *Meliola symplocacearum* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 57. 1941.

Cols. epiphyllous, scattered, effuse, to 8 mm. diam. Hyphae straight or slightly undulate, branching or irregular, loosely reticulate, cells 23—32×7—9 μ. Ch. alternate, very rarely opposite, often slightly bent; stc. 3—4 μ long; hc. oblong to ellipsoid, sometimes more or less irregular, 14—19×8—10 μ. Mh. few, solitary or opposite, ampulliform, 17—25×8—9 μ. Ms. not numerous, usually grouped around P., straight or slightly bent, to 560×8—9 μ, apex acute or 2—3-dentate, to 12 μ. P. scattered, smooth or rough, to 225 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 41—50× 12—23 μ.

On *Symplocos lucida*, Formosa, Yamamoto, type (not seen by present writer); — On *S. ferruginea*, Bornea, Hallier 1413 (BO), cols. hypophyllous; — On *S. phanerophlebia*, Borneo, Elmer 20700 (BO); — On *S.* sp., Philippines, Stevens 2048 p. p. (FLS).

(1231) *Meliola symplocicola* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 57. 1941.

Cols. ampigenous, mostly hypophyllous, thin to 30 mm. diam. or sometimes confluent. Hyphae irregularly undulate, branching opposite or irregular, acute to wide, loosely interwoven-reticulate, cells mostly 20—35×5—8μ. Ch. alternate or more scattered, spreading, usually bent, 20—32 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. clavate-oblong, usually bent, entire or angulose, 13—22× 8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 21—31×7—8 μ. Ms. mostly grouped around P., straight, to 630× 8—10 μ, apex 2—3-dentate to 15 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—46×17—20× 14 16 μ.

On *Symplocos theophrastaefolia*, Formosa, Yamamoto, type (USDA).

(1232) *Meliola symplocicola* Yamam. var. *chinensis* Hansf., Farlowia **3**: 277. 1948.

Cols. amphigenous, thin, to 4 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching mostly opposite at wide angles, loosely reticulate, cells mostly 25—30×6—7 μ. Ch. alternate, spreading, straight or bent, 18—30 μ long; stc. cylindric, 4—9 μ long, hc. cylindric, rounded at apex, entire, often bent, 14—22×9—11 μ. Mh. scattered, opposite or alternate, narrow ampulliform, 18—28×7—9 μ, neck elongate. bent or contorted. Ms. grouped around P. and thinly scattered over mycelium, not numerous, straight, simple, acute, to 560×9—10 μ. Sp. oblong, obtuse, 4-septate, constricted, 38—46×17—21 μ.

On *Symplocos setchuenensis*, China, Cheo 632, type (F).

(1233) *Meliola symploci* Yamam., Trans. Nat. Hist. Soc. Formosa, **30**: 422. 1940.

Cols. epiphyllous, effuse, slightly velvety, to 7 mm. diam., thin. Hyphae straight or slightly undulate, cells 28—51×6—7 μ, branching opposite or irregular, loosely reticulate. Ch. alternate, irregularly clavate, spreading or antrorse, straight or bent; stc. 7—14 μ long; hc. irregularly 3—6-lobate, 16—23×16—25 μ. Mh. few, mixed with ch., alternate, ampulliform, 21—28×7—10 μ. Ms. fairly numerous, often grouped around P., straight or slightly bent, simple, obtuse, to 670×8—10 μ. P. scattered, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 46—60×15—20 μ.

On *Symplocos eriobotryaefolia*, Formosa, Yamamoto, type; — On *S.* sp., Philippines, Stevens 2048 p. p. (FLS).

Host Family 228. Loganiaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.3230	Cols. thin, minute; hyphae substraight to undulate; hc. ovate-oblong, entire	*psychotriae* var. *labordiae*	(1234)

Asteridiella

3101.5330	Cols. thin; hyphae crooked; hc. clavate to irregularly lobate; sp. ellipsoid	*implicata*	(1235)
3101.4330	Cols. thin; hyphae straight to sinuous; hc. globose-ovoid, small; sp. cylindric	*nuxiae*	(1236)
3101.4240	Cols. thin; hyphae sinuous; hc. clavate-piriform or subangulose; sp. oblong to sub-ellipsoid	*obducens*	(1237)
3101.4230	Cols. subdense; hyphae sinuous; hc. ovate to clavate, entire; P-cells conoid to 25 μ high; sp. oblong to subellipsoid	*inermis*	(1238)
3101.3220	Cols. thin to subdense; hyphae sinuous; hc. small, globose, entire; P-cells rounded, to 8 μ high; sp. oblong	*anthocleistae*	(1239)

3101.3220	Cols. dense; hyphae sinuous; hc. large, subglobose-clavate, entire; P-cells conoid to mammillate, to 30 μ high; sp. oblong	*buddleiae*	(1240)
3101.3220	Cols. dense; hyphae sinuous; hc. small, ovate to globose, entire; P-cells conoid, to 10 μ high; sp. oblong	*buddleyicola*	(1241)

Meliola

31 1.4224	Cols. thin; hyphae substraight; hc. entire, cylindric; ms. acute or 2—3-dentate to 30 μ	*evanida*	(1242)
3121.5232	Cols. dense, crustose, velvety; hyphae substraight; hc. globose to wide ovate; ms. arcuate to subuncinate, acute	*brooksii*	(1243)
3113.4332	Cols. dense, velvety; hyphae straight to sinuous; hc. globose-clavate, entire; ms. acute	*fagraeae*	(1244)
3111.4222	Cols. subdense, velvety; hyphae undulate; hc. large, globose-clavate, entire; ms. obtuse	*usteriae*	(1245)
3111.4222	Cols. dense, subvelvety; hyphae substraight to undulate; hc. cylindric, entire; ms. acute	*gardneriae*	(1246)
3111.4221	Cols. thin; hyphae undulate; hc. globose; ms. obtuse	*strychnicola*	(1247)
3111.3223	Cols. thin; hyphae substraight to crooked; hc. ovate-cylindric or angulose; ms. obtuse ...	*strychni-multiflorae*	(1248)
3111.3221	Cols. thin; hyphae undulate; hc. oblong-subglobose, entire; ms. obtuse	*strychnicola* var. *vanderystii*	(1249)
3111.3222	Cols. dense, subvelvety; hyphae substraight; hc. ovate-piriform, entire; ms. acute	*warneckei*	(1250)
3111.3221	Cols. thin, subvelvety; hyphae straight; hc. ovate-cylindric, entire; ms. acute.....	*petchii*	(1251)
3111.3221	Cols. thin to subdense, subvelvety; hyphae undulate to substraight; hc. ovate, entire; ms. obtuse to subacute, often flexuous	*spigeliae*	(1252)

(1234) *Amazonia psychotriae* (P. Henn.) Theiss. var. *labordiae* Hansf., Sydowia Beih. **1**: 89. 1957.

Cols. epiphyllous, to 0.5 mm. diam., smooth, thin. Hyphae substraight to undulate, branching irregular, acute, loosely radiating, cells mostly 10—15×6 μ. Ch. alternate, antrorse, straight or bent, 15—20 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. ovate to oblong, entire, 11—15×7—10 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 15—19×7 μ. P. single in centre, flattened-globose beneath a radiate mycelial layer, to 270 μ diam., margin not or slightly fimbriate. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—39×15—18 μ.

On *Labordia* sp., Hawaii, Stevens 611, type (FLS).

(1235) *Asteridiella implicata* (Doidge) Hansf., Sydowia **10**: 48. 1957.

= *Irene implicata* Doidge, Bothalia **1**: 206. 1924.

= *Irenina implicata* (Doidge) Stev., Ann. Mycol. **25**: 465. 1927.

Cols. hypophyllous, thin, to 4 mm. diam. Hyphae crooked and subtorulose, branching irregular, forming a tangled network amongst the lepidote leaf-scales, cells mostly 10—35×5—7 μ. Ch. alternate or rarely opposite, usually irregularly bent, 20—24 μ long; stc. cylindric to cuneate, 4—16 μ long, sometimes 1-septate; hc. clavate, subglobose or very irregular and sublobate, often bent to sinuous, 10—26×8—20 μ. Mh. alternate, opposite or ternate, mixed with ch., ampulliform, 16—27×6—7 μ, neck elongate. P. in central close group, verrucose, to 290 μ diam., surface cells rounded to conoid, to 10 μ high. Sp. ellipsoid, obtuse, straight or slightly bent, 4-septate, slightly constricted, 50—55×20—24 μ, the middle cell distinctly the largest.

On *Chilianthus arboreus*, South Africa, PRET 17251, 20345.

(1236) *Asteridiella nuxiae* (Syd.) Hansf., Sydowia **10**: 49. 1957.
= *Irene nuxiae* Syd., Bothalia **2**: 433. 1928.
= *Irenina nuxiae* (Syd.) Hansf., Proc. Linn. Soc. London **157**: 174. 1946.

Cols. amphigenous, mostly epiphyllous, thin, to 4 mm. diam. Hyphae straight to sinuous, cells mostly 15—30×5—8 μ, branching opposite, acute, loosely to rather closely interwoven-reticulate. Ch. alternate, usually antrorse, straight or bent, 13—25 μ long; stc. cylindric to cuneate, 2—8 μ long; hc. mostly subglobose, sometimes elongate, entire, usually straight, 9—16×8—13 μ. Mh. separate or sometimes mixed with ch., opposite or alternate, ampulliform, 15—18×7—9 μ. P. scattered, to 220 μ diam.; surface cells 15—30 μ diam., mammillate or with curved acute apices, to 25 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, rather strongly constricted, 39—50×17—22 μ.

On *Nuxia floribunda*, South Africa, PRET 1776, 9554, 10874, 10942, 11441, 11837, 11571, 12284, 14944, 17181, 17107, 17212, 17261, 17745; — On *Nuxia tomentosa*, South Africa, PRET 1746, 17743; — On *Lachnopylis congesta*, Congo Belge, Hendrickx 2095.

(1237) *Asteridiella obducens* (Gaill.) Hansf., Sydowia **10**: 49. 1957.
= *Meliola obducens* Gaill., Bull. Soc. Myc. France **8**: 179. 1892.
= *Irenina obducens* (Gaill.) Stev., Ann. Mycol. **25**: 467. 1927.

Cols. amphigenous, to 1 mm. diam., thin. Hyphae substraight to crooked, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—25×5—8 μ. Ch. alternate, spreading or antrorse, straight or bent, 20—28 μ long; stc. narrowly cuneate, 6—12 μ long; hc. clavate to piriform, entire or truncate at apex, 13—19×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×6—8 μ. P. scattered, immature. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 38—42×15—17 μ.

On *Buddleia* sp., Ecuador, Lagerheim s. n., type (P); Brazil, Ule s. n. (S, ex Sydow); — On *B. intermedia*, Ecuador, Stevens 179 (FLS).

(1238) *Asteridiella inermis* (K. & C.) Hansf., Sydowia **10**: 48. 1957.
= *Meliola inermis* Kalchbr. & Cooke, Grevillea **9**: 34. 1880.
= *Meliola quinqueseptata* Rehm, Ascomyc. 492.
= *Meliola quinquespora* Thuem., Flora **59**: 568. 1876.
= *Irene inermis* (K. &C.) Theiss. & Syd., Ann. Mycol. **15**: 194. 1917.

Cols. amphigenous, mostly epiphyllous, subdense, to 3 mm. diam. Hyphae substraight to undulate, cells 18—24×6—9 μ, branching opposite, acute, rather closely reticulate. Ch. alternate, antrorse, straight or slightly bent, 16—30 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. ovate, globose to clavate-piriform, 13—18×8—12 μ. Mh. mostly on separate hyphae in centre, opposite or alternate, ampulliform, 14—18×7—9 μ. P. in close central group, or scattered, verrucose, to 270 μ diam., surface cells rounded, conoid or produced into corniform processes to 25 μ long 14—18 μ wide at base not "larviform appendages". Sp. oblong to subellipsoid obtuse 4-septate, slightly constricted, 35—46×13—17 μ.

On *Buddleia* sp., South Africa, MacOwan 1251 (K, type); Rehm, Ascomyc. 492 (type of *M. quinqueseptata* Rehm); Thuemen, Mycoth. Univ. 657 (type of *M. quinquespora* Thuem.); Medley-Wood 570; Rabh.-Wint.-Pazschke, Fung. europ. 2572(K); — On *B. auriculata*, South Africa, PRET 11359, 12327, 12354, 17764; — On *B. pulchella*, South Africa, PRET 1571, 11568, 11602; — On *B. salvifolia*, South Africa, PRET 1742, 10146, 11356, 14127, 17211, 17229, 17765; — On *Chilianthus dyssophyllus*, South Africa, PRET 11583; — On *Buddleia* sp., Brazil, Ule, Herb. brasil. 1716 (K).

(1239) *Asteridiella anthocleistae* (Hansf. & Deight.) Hansf., Sydowia **10**: 46. 1957.
= *Irenina anthocleistae* Hansf. & Deight., Macol. Paper, IMI, **23**: 51. 1948.
= *Irene anthocleistae* (Hansf. & Deight.) Hansf., Sydowia **9**: 6. 1955.

Cols. epiphyllous, thin to subdense, smooth, to 3 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular, acute, closely reticulate, cells mostly 20—25×5—7 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 14—20 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose to wide clavate, entire, 9—13×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×6—8 μ. P. scattered, to 170 μ diam., surface cells scarcely projecting, bluntly rounded to conoid, 20 μ diam. and to 8 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—39×13—15 μ.

On *Anthocleista frezoulsii*, Sierra Leone, Deighton 1394, type.

(1240) *Asteridiella buddleiae* Hansf., Sydowia **10**: 47. 1957.
= *Irenina buddleiae* Hansf., Farlowia **3**: 270. 1948.
= *Irene buddleiae* Hansf., Sydowia **9**: 6. 1955.

Cols. amphigenous, mostly epiphyllous, to 1 mm. diam., dense, or numerous and confluent. Hyphae sinuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—25× 7—8 μ. Ch. alternate, straight or bent, 18—31 μ long; stc. cylindric to cuneate, 5—15 μ long; hc. subglobose to clavate, entire, 13—18× 9—15 μ. Mh. few, separate, opposite or alternate, ampulliform, 12—17 9—15 μ. Mh. few, separate, opposite or alternate, ampulliform, 12—17×7 μ. P. in loose central group, to 175 μ diam., surface cells about 35 μ diam., conoid to mammillate and to 30 μ high, rarely with short cylindric processes to 40 μ high. Sp. cylindric, obtuse, 4-septate, constricted, 33—37×13—16 μ.

On *Buddleia* sp., China, Cheo 2940, type (F).

(1241) *Asteridiella buddleyicola* (P. Henn. Hansf., Sydowia **10**: 47. 1957.

= *Meliola buddleyicola* P. Henn., Hedwigia **44**: 61. 1904.

= *Irenina buddleyicola* (P. Henn.) Stev., Ann. Mycol. **25**: 455. 1927.

= *Irene buddleyicola* (P. Henn.) Hansf., Sydowia **9**: 6. 1955.

Cols. numerous, minute, dense, smooth, epiphyllous. Hyphae sinuous, branching usually alternate or irregular, closely interwoven and densely reticulate, cells mostly 15—25×5—7 μ. Ch. alternate, antrorse, straight, 13—20 μ long; stc. cuneate to cylindric, 2—7 μ long; hc. ovate to subglobose, entire, 9—14×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—17×6—8 μ. P. closely scattered, almost smooth, to 170 μ diam., surface cells obtuse conoid, to 10 μ high and about 20 μ diam. at the base. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—34×11—13 μ.

On *Buddleia americana*, Brazil, Ule, Herb. brasil 3187. type; Ule, Mycoth. brasil. 56 (S).

(1242) *Meliola evanida* Gaill., Le Genre Meliola, 1892. p. 102.

Cols. hypophyllous, to 10 mm. diam. or confluent, thin, with scattered setae. Hyphae slightly undulate, branching opposite or irregular, acute, loosely reticulate, cells mostly 30—35×5—7 μ. Ch. alternate, more or less bent, spreading or antrorse, 21—29 μ long; stc. cylindric, 5—8 μ long, often bent; hc. cylindric with rounded apex, entire, usually bent, 15—20×7—9 μ. Mh. numerous, mixed with ch., alternate or opposite, ampulliform, 18—30×7 μ, neck elongate. Ms. in loose groups, to 1100×9—11 μ, simple and acute, or 2—3-dentate to 30 μ, grouped around P. P. scattered, verrucose, to 150 μ diam. Sp. ellipsoid to cylindric, obtuse, 4-septate, constricted, 38—45×14—17×12—13 μ.

On *Strachnos* sp., Angola, Thollon, type (P).

(1243) *Meliola brooksii* Hansf., Sydowia **9**: 10. 1955.

Cols. amphigenous, to 3 mm. diam., crustose, adherent, closely

velvety. Hyphae substraight, branching opposite or irregular, subrectangular, close, densely reticulate and becoming solid, cells mostly 10—15×6—9 μ. Ch. alternate, straight or bent, spreading or antrorse, closely crowded, 12—18 μ long; stc. cylindric, 2—5 μ long; hc. globose to wide ellipsoid, entire, 10—14×9—12 μ. Mh. not seen. Ms. numerous, scattered, simple, acute, in upper half broadly arcuate to subuncinate, to 350×8—10 μ. P. in close central group, slightly verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 44—51×16—19×12—14 μ.

On *Fagraea fragrans*, Malaya, Brooks 95, type (K).

(1244) *Meliola fagraeae* Syd., Ann. Mycol. **12**: 549. 1914.

Cols. mostly hypophyllous, dense, velvety, 4—15 mm. diam. Hyphae undulate to crooked (especially on the upper surface of the leaf), branching opposite at wide or acute angles, becoming densely reticulate and nearly solid, cells mostly 15—20×7—8 μ. Ch. alternate or to 10% opposite, antrorse or spreading, often bent, 15—25 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. globose to oblong, straight or bent, often slightly rounded-angulose, 11—18×8—15 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 340×10 μ. P. scattered or subaggregate, slightly verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—47× 16—18×13—15 μ.

On *Fagraea plumeriaefolia*, Philippines, PBS 22222, type; — On *F. fragrans*, Sumatra, BO 6323; Singapore, BO 5434; — On *F. speciosa*, Amboina, Robinson 2134 p. p.; — On *F.* sp., Philippines, PBS 29811, 35883.

(1245) *Meliola usteriae* Hansf. & Deight., Mycol. Paper, IMI **23**: 52. 1948.

Cols. amphigenous, thin to subdense, velvety, to 3 mm. diam. Hyphae sinuous to substraight, branching opposite at wide angles, loosely to clesely reticulate, cells mostly 20—30×7 μ. Ch. alternate, usually straight, 19—24 μ long, spreading or antrorse; stc. cylindric, 5—9 μ long; hc. subglobose to widely clavate, entire, 12—16×10—15 μ. Mh. mixed with ch., numerous towards centre of colony, opposite or alternate, ampulliform, 14—18×7—8 μ. Ms. numerous, scattered, to 360×8 μ, straight or slightly flexuous, simple, obtuse. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×13—16 μ.

On *Usteria guineensis*, Sierra Leone, Deighton 1887, type; — On *Anthocleista vogelii*, Sierra Leone, Deighton 988, 1959.

(1246) *Meliola gardneriae* Hansf. & Thirum., Farlowia **3**: 293. 1948.

Cols. epiphyllous, to 2 mm. diam., closely scattered, not confluent, dense, subvelvety.Hyphae substraight to slightly undulate,

branching opposite at wide angles, closely reticulate, cells mostly 10—25×7—9 μ. Ch. alternate, straight or bent, somewhat antrorse, 15—28 μ long; stc. cylindric, 5—10 μ long; hc. cylindric, rounded at apex, straight or bent, entire, 11—20×7—9 μ, rarely subangulose Mh. mixed with ch., few, mostly alternate, conoid to ampulliform, 18—27×7—8 μ. Ms. thinly scattered, substraight, simple, acute, to 400×8—9 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—42×17—20 μ.

On *Gardneria* sp., India, Thirumalachar 869, type.

(1247) *Meliola strychnicola* Gaill, Le Genre *Meliola*, 1892, p. 72.
= *Meliola vicina* Syd. var. *gaertnerae* Hansf. & Deight., Mycol. Paoer, I.M.I., **23**: 52. 1948.

Cols. epiphyllous, thin, smooth, to 3 mm. diam. or widely confluent. Hyphae undulate, branching opposite, acute, loosely to rather closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse, straight, 14—20 μ long; stc. cuneate, 3—7 μ long; hc. globose, entire, 9—14×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—8 μ. Ms. grouped around P., straight to slightly flexuous, simple, obtuse, to 270×7 μ. P. loosely scattered, globose, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 35—41×11—13 μ.

On *Strychnos* sp., Congo Francaise, De Brazza s. n., type (P); — On *Gaertnera paniculata*, Sierra Leone, Deighton 1857, 2394.

(1248) *Meliola strychni-multiflorae* Hansf., Sydowia **11**: 59. 1958.

Cols. hypophyllous, to 10 mm. diam., thin. Hyphae substraight, to crooked, branching opposite or irregular, at acute angles, loosely interwoven-reticulate, cells mostly 25—35×5—7 μ. Ch. alternate, antrorse or spreading, often irregularly bent, 18—28 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. ovate or cylindric, sometimes irregularly angulose, often bent, 14—21×8—12 μ. Mh. mixed with ch., mostly alternate, narrow ampulliform, 18—24×6—8 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse, to 600×7—8 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—34×13—14 μ.

On *Strychnos multiflora*, Philippines, Stevens 1806, type (FLS).

(1249) *Meliola strychnicola* Gaill. var. *vanderystii* Hansf., Sydowia Beih. **1**: 117. 1957.

Cols. epiphyllous, thin, to 2 mm. diam. Hyphae undulate, branching opposite, acute, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 17—24 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. subglobose to clavate or oblong, entire, 11—17×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. thinly scattered, and grouped around P., straight, simple, obtuse, to 240×8—9 μ. P. scat-

tered, verrucose, to 145 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—36×14—16×12—13 μ.

On *Strychnos suberifera*, Congo Belge, Vanderyst 43499, type (BRUX).

(1250) *Meliola warneckei* Hansf., Sydowia 9: 78. 1955.

Cols. mostly epiphyllous, dense, subvelvety, to 2 mm. diam. or confluent. Hyphae substraight, branching usually opposite, at wide angles, closely reticulate, cells mostly 15—20×7—8 μ. Ch. alternate, more or less antrorse, straight or recurved, 18—25 μ long; stc. cuneate to cylindric, 5—8 μ long; hc. piriform to cylindric, entire, straight or bent, 12—18×9—12 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform, to conoid, 14—19×7—8 μ. Ms. closely scattered and grouped around P., straight or slightly flexuous, simple, acute, to 400×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 35—39× 16—19.5 μ.

On *Strychnos* sp., Togoland, Warnecke in Rehm, Ascomyc. 1620, type (S).

(1251) *Meliola petchii* Hansf., Proc. Linn. Soc. London 157: 182. 1946.

Cols. amphigenous, to 5 mm. diam., thinly velvety, often numerous and confluent. Hyphae substraight, branching opposite, acute, thinly to closely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 4—9 μ long; cylindric to clavate, entire, 12—17×7—10 μ. Mh. few, mixed with ch., opposite or alternate, conoid to ampulliform, straight or bent, 15—22×7—8 μ, mostly in centre of colony. Ms. fairly numerous, scattered, straight, simple, acute, to 280×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—38×12—15 μ.

On *Strychnos nux-vomica*, Ceylon, Herb. Peradeniya 6518, type.

(1251) *Meliola spigeliae* Hansf., Sydowia 9: 49. 1955.

Cols. amphigenous, thin to subdense, to 2 mm. diam. or confluent, thinly velvety. Hyphae substraight to undulate, branching opposite at wide angles, loosely to closely reticulate-interwoven, cells mostly 15—25×5—7 μ. Ch. alternate, subantrorse, usually straight. 13—18 μ long; stc. cylindric, 3—5 μ long; hc. ovate, entire, often slightly pointed at apex, 10—15×6—8 μ. Mh. mixed with ch. on few hyphae, opposite or alternate, ampulliform, 15—23×6—8 μ. Ms. scattered and grouped around P., straight or slightly flexuous, not uncinate, simple, gradually attenuate to subacute apex, to 300×7—8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 24—32×10—12 μ.

On *Spigelia* sp., Brazil, Ule, Herb. brasil. 1284, type (S, ex Rehm); — On *Strychnos taxifera*, Panama, Stevens 196, 723 (FLS); —

On *Strychnos panamensis*, Honduras, Standley 53174 (F); — On *Spigelia* sp., Ecuador, Lagerheim in Herb. Patouillard (F).

Host Family 229. Oleaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220	Cols. ....; hyphae crooked; hc. ovatecylindric, entire; ps. obtuse, to 100 μ	*haploa*	(1253)

Asteridiella

3101.4330	Cols. dense; hyphae substraight to undulate; hc. irregular, deeply lobate; P-cells conoid, to 18 μ high	*americana*	(1254)
3101.3220	Cols. thin; hyphae substraight; hc. ovate to cylindric-clavate, entire; P-cells scarcely projecting	*linocieriae*	(1255)
3101.3220	Cols. thin; hc. hemispheric-ellipsoid	*hispaniolensis*	(1256)

Meliola

3121.4231	Cols. dense; hyphae substraight; hc. obovate to irregular or sublobate; ms. uncinate, obtuse	*petiolaris*	(1257)
3112.5233	Cols. dense; hyphae substraight; hc. ovate to cylindric, entire; ms. acute	*gemellipoda*	(1258)
3113.4223	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-clavate, entire; ms. acute	*jasminicola*	(1259)
3113.4221	Cols. subdense; hyphae substraight to crooked; hc. subglobose-oblong or subangulose; ms. acute	*linocierina*	(1260)
3113.3222	Cols. thin to subdense; hyphae undulate; hc. small, cylindric, entire; ms. acute	*malabarensis*	(1261)
3111.5332	Cols. dense, subcrustose, subvelvety; hyphae straight; hc. ovate to wide clavate, entire; ms. obtuse to subacute	*osmanthi*	(1262)
3111.5333	Cols. thin to dense; hyphae undulate; hc. large, cylindric or sublobate; ms. obtuse	*xumenensis*	(1263)
3111.5331	Cols. thin to dense, velvety; hyphae substraight; hc. large, ovate-clavate, entire; ms. obtuse to acute	oleicola	(1264)
3111.5321	Cols. dense, velvety; hyphae substraight to undulate; hc. oblong-piriform or sublobate; ms. obtuse to acute	*notelaeae*	(1265)
3111.5222	Cols. thin, subvelvety; hyphae substraight; hc. subglobose-clavate, entire, small; ms. obtuse to suacute	*tayabensis*	(1266)
3111.43×2	Cols. dense; hyphae substraight; hc. large, cylindric to lobate; ms. acute	*osmanthicola*	(1267)
3111.4322	Cols. dense, velvety; hyphae substraight; hc. cylindric-ovate, attenuate at apex; ms. acute	*linocieriicola*	(1268)
3111.4321	Cols. dense; hyphae substraight; hc. large, subglobose-piriform; ms. obtuse	*mayapeicola*	(1269)
3111.42×3	Cols. thin; hyphae substraight to flexuous; hc. cylindric to angulose; ms. acute	*osmanthina*	(1270)

3111.4222	Cols. dense, velvety; hyphae substraight; hc. cylindric, entire; ms. obtuse to subacute.....	*osmanthi* var. *hawaiiensis*	(1271)
3111.4222	Cols. very thin; hyphae straight to flexuous; hc. subglobose-ovate; ms. acute.....	*jasmini*	(1272)
3111.4222	Cols. thin; hyphae undulate to crooked; hc. clavate-cylindric, entire; ms. acute	*daviesii*	(1273)
3111.3221	Cols. thin; hyphae straight to undulate; hc. ocoid-cylindric, entire; ms. obtuse.....	*mayapeae*	(1274)
3111.3222	Cols. dense, velvety; hyphae sinuous to crooked; hc. subglobose to angulose; ms. acute...	*jasminicola* var. *africana*	(1275)
3111.4232	Cols. ?; hc. angulose; ms. acute	*oleicola* var. *jasmini*	(1276)
3111.4342	(descr. incomplete)	*osmanthi-aquifolii*	(1277)

(1253) *Irenopsis haploa* Cif., Mycopathologia **7**: 133. 1954.

Cols. epiphyllous, to 5 mm. diam. Hyphae crooked, branching at 45°, 6—8 μ thick. Ch. alternate, cylindric to ovate, 15—20×8—12 μ. stc. 2—4 μ long. Mh. abundant, elongate, conoid to ampulliform, 25×8 μ. P. globose, to 190 μ diam.; ps. few, opaque, short, rigid, straight or slightly curved, obtuse, 72—100×6—8 μ. Sp. ellipsoid to ovate, 4-septate, constricted, 36—40×12—14 μ.

On *Linocieria dictyophylla*, San Domingo, Ekman 2855, type (not seen by present writer).

(1254) *Asteridiella americana* Hansf., Sydowia **10**: 51. 1957.

Cols. epiphyllous, to 2 mm. diam., dense, smooth. Hyphae substraight to undulate, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—25×7—9 μ. Ch. alternate, subantrorse, straight or bent, 25—40 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. very irregularly and deeply lobate, versiform, 20—29×13—23 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—25×7—9 μ. P. scattered, verrucose, to 210 μ diam., surface cells rounded to obtuse conoid, to 18 μ high. Sp. ellipsoid, obtuse, 4-septate, constricted, 43—49×20—23 μ.

On *Osmanthus americana*, U.S.A., Thorne et al. 9055, type (CUP); Florida, Thaxter 7379 p. p. (F).

(1255) *Asteridiella linocieriae* (Syd.) Hansf., Sydowia **10**: 48. 1957. (3101.3220)

= *Meliola linocieriae* Syd., Ann. Mycol. **12**: 550. 1914.

= *Irenina linocieriae* (Syd.) Hansf., Proc. Linn. Soc. London, **160**: 128. 1955.

Cols. amphigenous, thin, to 10 mm. diam. Hyphae substraight, branching opposite at wide angles loosely reticulate cells mostly 30—40×5—6 μ. Ch. alternate more or less antrorse 16—22 μ long; usually straight; stc. cylindric 5—10 μ long; hc. ovate to clavate or oblong entire rounded at apex 11—16×7—9 μ. Mh. mixed with ch.

alternate or opposite ampulliform 15—19×6—8 μ. P. scattered verrucose to 150 μ diam. surface cells very bluntly conoid scarcely projecting. Sp. oblong to subellipsoid obtuse 4-septate slightly constricted 31—38×14—16 μ.

On *Linocieria cumingiana* Philippines, PBS 254 and Sydow, Fung. exot. exs. 375 (portions of type, both mixed with *Meliola linocieriicola*); — On *L. ramiflora*, Philippines PBS 34016 (FLS).

(1256) *Asteridiella hispaniolensis* (Cif.) Hansf. comb. n.

= *Meliola hispaniolensis* Cif. Mycopathologia **7**: 135. 1954.

Cols. diffuse indefinite to 10 mm. diam., rather thin. Hyphae septate, branching at wide angles, 5½—7½ μ thick. Ch. alternate or unilateral, 16—18×10—13 μ; hc. hemispheric to ellipsoid, 8—10 μ diam.; stc. 3—6 μ long. Mh. few, opposite, ampulliform, 13—16×6—7 μ. Setae none. P. globose, scabrid, to 150 μ diam. Sp. ellipsoid, 4-septate, strongly constricted, 31—35×14—16 μ.

On *Linocieria domingensis*. San Domingo, Ekman 2876-bis, type (not seen by the present writer).

(1257) *Meliola petiolaris* Doidge, Trans. Roy. Soc. South Africa 8: 142. 1920.

Cols. hypophyllous, on leaf margins, veins and petioles, also on twigs, to 7 mm. diam., dense, velvety. Hyphae substraight, branching opposite or alternate, acute, densely radiating-reticulate, cells mostly 25—35×5—7 μ. Ch. alternate, very rarely opposite, straight or bent, antrorse, 15—40 μ long; stc. cylindric to cuneate, 6—20 μ long; hc. obovate, clavate or irregularly angulose to sublobate, straight or bent, 11—20×10—15 μ. Mh. not seen. Ms. very numerous, closely scattered, simple, uncinate, to 250×8—9 μ, tapering slightly to obtuse apex. P. scattered, minutely verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—44×13—16 μ, the middle cell usually slightly the largest.

On *Olea laurifolia*, South Africa, PRET 11558; — On *O. capensis*, South Africa, PRET 17173-a.

(1258) *Meliola gemellipoda* Doidge, Bothalia **1**: 80. 1920.

= *Meliola busogensis* Hansf., Journ. Linn. Soc. London **51**: 538. 1938.

Cols. epiphyllous, less commonly amphigenous, dense, velvety, to 5 mm. diam. Hyphae straight or slightly undulate, branching opposite or irregular, acute or wide, densely reticulate, cells mostly 15—30×6—9 μ. Ch. opposite, somewhat antrorse, straight or slightly bent, 14—23 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to cylindric or clavate, entire, 10—14×6—10 μ. few, mixed with ch., ampulliform, 20—30×10 μ, opposite or alternate. Ms. fairly numerous, scattered, straight, simple, acute, to 700×9—12 μ. P. scattered or in loose central group, verrucose, to 250 μ diam. Sp. oblong or slightly

ellipsoid, obtuse, 4-septate, slightly constricted, 44—58×19—22×16—18 μ.

On *Jasminum angulare*, South Africa, PRET 12352, type; — On *J. pauciflorum*, Sierra Leone, Deighton 1527 p. p., 1086 p. p., 1049; Gold Coast, Deighton CB 870 p. p., Hughes in IMI 37340, 37341, 37339; — On *J. azoricum*, Tanganyika, Hendrickx 1996; — On *J. malabaricum*, India (F); — On *J.* sp., Uganda, Hansford 2311 (type of *M. busogensis*), 3537, 2814, 2836, 3247, 3305; Malaya, Burkill 4141 (K); India, Thirumalachar s. n.; Congo Belge, Hendrickx 3947 p. p.

(1259) *Meliola jasminicola* P. Henn., Hedwigia **34**: 11. 1895.
= *Meliola schwarzii* Hansf., Reinwardtia **3**: 98. 1954.

Cols. epiphyllous, dense, velvety, to 1 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite, acute, densely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate or to about 10% opposite in some colonies, spreading or slightly antrorse, straight or bent, 15—28 μ long; stc. cylindric, 3—10 μ long; hc. ovate to oblong, obtuse, entire, 11—18×8—12 μ. Mh. mixed with ch., opposite or alternate ampulliform 20—30×7—10 μ. Ms. numerous straight simple, acute, to 600×9—11 μ. P. scattered, verrucose, to 180 diam. Sp. oblong to subellipsoid, obtuse 4-septate constricted 38—51×17—21×14—16 μ.

On *Jasminum* sp. Tonkin Balansa 4542 (S FLS) type; — On *J. sambac*, Java, Schwarz in BO 2459, type of *M. schwarzii*, BO 11555; Ambiona, Rant 330 (BO); Borneo, Clemens 21035, Yates 94; Sumatra, Yates 118 (FLS); Philippines, PBS 7469, 39262, Stevens 25, 47, 276, 894 (FLS).

(1260) *Meliola linocierina* Hansf., Sydowia Beih. **1**: 110. 1957.

Cols. epiphyllous, subdense, to 2 mm. diam. or confluent. Hyphae substraight to undulate or crooked, branching opposite at wide angles, closely reticulate, cells mostly 15—20×5—6 μ. Ch. opposite or alternate, spreading or slightly antrorse, often bent, 13—18 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, piriform or oblong, entire or slightly rounded-angulose, usually bent, 9—13×6—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18 ×6—7μ. Ms. few, scattered, straight or slightly flexuous, simple, acute, to 280×7—8 μ. P. scattered, globose, rough, to 140 μ diam., surface cells obtusely conoid, to 20 μ high. Sp. oblong, obtuse, 4-septate, constricted, 37—44×15—17 μ.

On *Linocieria* sp., Philippines, PBS 33432, type (FLS).

(1261) *Meliola malabarensis* Hansf., Proc. Linn. Soc. London **157**: 182. 1946.

Cols. amphigenous, thin to subdense in centre, to 4 mm. diam. or confluent. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 15—20×5—6 μ. Ch. alternate or to 5%

opposite, spreading to slightly antrorse, straight or slightly bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. cylindric to ovate, entire, mostly straight, 8—11 × 6—8 μ. Mh. mixed with ch. in centre of colony, opposite or alternate, conoid to narrow ampulliform, straight or bent, 15—25 × 6—8 μ. Ms. scattered, straight, simple, acute, to 400 × 6—7 μ. P. scattered, verrucose, to 150 μ diam., each on a radiate subiculum. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 30—36 × 13—16 μ.

On *Olea* sp., India, Butler, 1904, type.

(1262) *Meliola osmanthi* Syd., Ann. Mycol. **18**: 157. 1920.

Cols. epiphyllous, rounded, to 5 mm. diam. or confluent, dense, subcrustose, thinly velvety. Hyphae straight or slightly undulate, branflhing opposite, acute, closely radiating-reticulate, cells mostly 15—20 × 6—8 μ. Ch. alternate only, antrorse, but often slightly recurved above, 17—23 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. ovate to wide clavate, straight or somewhat bent, entire, 12—17 × 8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. few to numerous, straight, to 320 × 7—9 μ, simple, apex obtuse to subacute. P. in close central group, each on solid disc of exhyphopodiate hyphae, globose, verrucose, to 250 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—54 × 20—23 μ, the central cell often the largest.

On *Osmanthus aquifolius*, Japan, Krug 88, type (S); — On *O. sandwicensis* Hawaii, Stevens 513 p. p. (FLS); — On *O. americana*, U.S.A., CUP 37984 p. p.; Mellichamps, 1876, Tracy 5228, Earle, 1894, Farlow s. n. (F); Thaxter 7379 0. p. (F); — On *O. matsumuranus*, Formosa, Yamamoto (USDA).

(1263) *Meliola xumenensis* Doidge, Bothalia **4**: 200. 1941.
= *Meliola ngongensis* Hansf., Proc. Linn. Soc. London **158**: 34. 1948.

Cols. epiphyllous, thin to subdense, to 3 mm. diam. Hyphae substraight to sinuous or flexuous, branching opposite or irregular at wide angles, loosely to closely reticulate, cells mostly 25—40 × 6—10 μ. Ch. alternate or unilateral, spreading, straight or irregularly bent, 25—43 μ long; stc. cylindric to cuneate, 4—14 μ long; hc. cylindric with rounded apex, to sinuous or sublobate, often irregularly bent, versiform, 19—27 × 10—17 μ. Mh. separate or mixed with ch., opposite or alternate, conoid to ampulliform, 20—28 × 6—9 μ. Ms. few to numerous, scattered and grouped around P., straight or slightly bent, simple, obtuse, to 600 × 8—10 μ, apex 3—4μ thick. P. scattered or in loose central group, verrucose, to 200 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, slightly constricted, 45—53 × 18—22 × 16—17 μ.

On *Jasminum streptopus*, South Africa, Doidge 29897, type; — On *J.* sp., Kenya, Hendrickx 2565 (type of *M. ngongensis*).

(1264) *Meliola oleicola* Doidge, Bothalia **1**: 73. 1922.

Cols. amphigenous, dense, thinly velvety, to 6 mm. diam. or confluent over the leaf. Hyphae substraight to flexuous, cells mostly 12—25×6—9 μ, branching usually opposite at acute or wide angles, loosely to densely reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—32 μ long; stc. cylindric to cuneate, 4—11 μ long; hc. ovate, cylindric or clavate, entire, rarely angulose, 11—20×8—13 μ. Mh. separate, opposite or alternate, ampulliform or conoid, 17—23—(30)×6—9 μ. Ms. few to numerous, scattered or grouped around P., straight or slightly flexuous, simple, obtuse or more often acute, to 450×8—9 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong to widely ellipsoid, obtuse, 4-septate, constricted, 43—51×19—25 μ.

On *Olea capensis*, South Africa, PRET 12331, 12332, 17232; — On *O. foveolata*, South Africa, PRET 12351, 12364, 14218; — On *O. laurifolia*, South Africa, PRET 1767, 1835, 9103, 10937, 10967, 11557, 17236; — On *O. pegleri*, South Africa, PRET 8382, 8785; — On *O. glandulifera*, Ceylon, Herb. Peradeniya 5299.

(1265) *Meliola notelaeae* Hansf., Proc. Linn. Soc. NSW **68**: 70. 1953.

Cols. amphigenous, black, dense, velvety, to 3 mm. diam. or sometimes confluent. Hyphae substraight to undulate, dark brown, cells mostly 20—25×6—7 μ, branching opposite, acute, densely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 18—23 μ long; stc. cylindric, 4—11 μ long; hc. oblong, piriform and entire, to irregularly sinuous-bent and rarely sublobate, 12—18×9—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 20—25×6—8 μ. Ms. numerous, straight, simple, obtuse to acute, to 270×7—9 μ. P. scattered, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, 43—52×17—20 μ, the middle cell sometimes slightly the largest.

On *Notelaea reticulata*, New South Wales, Fraser 197, type; — On *N. longifolia*, l. c., Fraser 160; — On *N. venosa*, l. c., Fraser 13-c, 13-d.

(1266) *Meliola tayabensis* Yates, Philipp. Journ. Sci., C. Botany, **12**: 369. 1917.

Cols. hypophyllous, thin, slightly velvety, to 20 mm. diam. or confluent over the leaf. Hyphae straight, branching opposite or irregular, acute, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, spreading or subantrorse, 13—18 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to clavate, entire, 10—13×7—10 μ. Mh. mixed with ch., alternate or less commonly opposite, conoid to ampulliform, 17—24×6—7 μ. Ms. fairly numerous, scattered and grouped around P., straight or slightly flexuous, simple, obtuse to subacute, to 400×8—10 μ, gradually attenuate to apex. P. scattered, verrucose, to 180 μ diam. Sp. slightly fusoid with attenuate-rounded

ends, usually straight, 4-septate, constricted, 40—55×13—16 μ, the middle cell often slightly the largest.

On *Linocieria* sp., Philippines, PBS 25649, type (S), PBS 33432 p. p. (FLS).

(1267) *Meliola osmanthicola* Hansf., Sydowia **9**: 70. 1955.

Cols. epiphyllous, dense, to 3 mm. diam., rarely also hypophyllous. Hyphae straight or slightly undulate, cells 20—25×7—8 μ, branching opposite, acute, densely reticulate. Ch. alternate, more or less antrorse, straight or usually bent, 25—38 μ long; stc. cuneate to cylindric, 7—12 μ long, often bent; hc. from bent cylindric to irregularly clavate and lobate, often bent, sometimes deeply lobed, 18—28×9—12 μ. Ms. mostly separate, opposite or alternate, ampulliform, 15—24×7—9 μ. Ms. scattered, straight, simple acute, to 500×7—9 μ. P. scattered, globose, immature. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—50×20—22 μ.

On *Osmanthus sandwicensis* Hawaii, Stevens 513, type (S, FLS), mixed with *M. osmanthina*; Stevens 289 p. p. (FLS).

(1268) *Meliola linocieriicola* Hansf., Proc. Linn. Soc. London, **160**: 128. 1948.

Cols. amphigenous, mostly epiphyllous, dense, to 4 mm. diam., velvetly. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate, spreading to antrorse, straight or slightly bent, 17—24 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. cylindric to narrowly ovate with often rather pointed apex, 12—18×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×6—9 μ, neck elongate. Ms. numerous, scattered, straight, simple, acute, to 400×7—10 μ. P. scattered, globose, to 1i0 μ diam. Sp. broadly ellipsoid, obtuse, 4-septate, rather strongly constricted, 38—45×20—21 μ.

On *Linocieria cumingiana*, Philippines, Sydow, Fung. exot. exs. 375, p. p., type (mixed with *Asteridiella linocieriae*).

(1269) *Meliola mayapeicola* Stev., Illinois Biol. Monogr. **2**: 51. 1916.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. alternate, more or less antrorse, straight or bent, 22—35 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. subglobose to piriform, entire or sometimes irregularly angulose to sublobate, 13—25×10—18 μ. Mh. few, mixed with ch., alternate or rarely opposite, ampulliform, 14—19×7—9 μ. Ms. few, straight or slightly bent, simple, obtuse, to 150×7—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to wide ellipsoid, obtuse, 4-septate, constricted, 43—46×22—25 μ.

On *Mayapea dominguensis*, Porto Rico, Stevens 7556 (type), 7468, 822.

In the original description the spores were given as 34×14 μ, but Stevens' own slides of the type show the spores described above as originating the colonies, while those of the original description are obviously foreign.

(1270) *Meliola osmanthina* Hansf., Sydowia 9: 70. 1955.

Cols. hypophyllous, thin, to 3 mm. diam. or confluent. Hyphae substraight to flexuous, cells mostly 20—30×5—6 μ, branching opposite or irregular at wide angles, loosely reticulate-interwoven. Ch. alternate, straight or bent, spreading or antrorse, 18—37 μ long; stc. cylindric, 5—15 μ long; hc. cylindric with rounded or attenuate apex, or irregularly bent to sinuous in outline to rounded-angulose, rarely truly entire, 15—22×6—8 μ. Mh. separate, opposite or alternate, narrow ampulliform, 15—22×6—7 μ. Ms. thinly scattered, straight, simple, acute, to 600×8—9 μ. P. scattered, verrucose, immature. Sp. ellipsoid, obtuse, 4-septate, constricted, 40—48×19—22 μ.

On *Osmanthus sandwicensis*, Hawaii, Stevens 513 (S ex USDA 71000), type, mixed with *M. osmanthicola*.

(1271) *Meliola osmanthi* Syd. var. *hawaiiensis* Hansf., Sydowia 9: 44. 1955.

Cols. epiphyllous, to 3 mm. diam., rarely confluent, dense, velvety. Hyphae substraight, branching opposite or irregular, very acute, closely radiating-reticulate, often almost parallel, becoming almost solid in centre, cells mostly 15—20×6—7 μ. Ch. alternate, rather closely antrorse, straight or slightly recurved at tip, 20—30 μ long; stc. cylindric, 4—9 μ long; hc. cylindric with rounded apex, 12—22×7—9 μ. Mh. few, separate in centre of colony, opposite or alternate, ampulliform, 15—22×7—9 μ. Ms. numerous, straight, simple, obtuse to subacute, to 450×9—11 μ. P. closely scattered, verrucose, to 190 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, constricted, 40—47×17—20 μ.

On *Osmanthus sandwicensis*, Hawaii, Stevens 146, type (FLS, K), 289 p. p. (FLS).

(1272) *Meliola jasmini* Hansf. & Stev., Journ. Linn. Soc. London, 51: 273. 1937.

Cols. amphigenous, mostly epiphyllous, very thin, to 4 mm. diam. or widely confluent. Hyphae straight to flexuous, cells mostly 25—35×6—7 μ. branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or more scattered, spreading or subantrorse, straight or slightly bent, 18—25 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. subglobose to ovate, 11—19×8—12 μ. Mh. separate, opposite, ampulliform, 15—20×6—9 μ. Ms. almost entirely grouped around P., straight, simple, acute, to 480×7—9 μ. P. loosely scattered, verrucose to almost smooth, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 33—40×15—17 μ.

On *Jasminum* sp., Uganda, Hansford 1251 (type), 1962, 2601, 3113, 3159, 3235, 3247, 3305, 3404, 3466; Penang, Malaya, Burkill 4141 p. p.; — On *J. pauciflorum*, Sierra Leone, Deighton 1528, 1527, 1086; Gold Coast, Deighton CB 870.

(1273) *Meliola daviesii* Hansf., Proc. Linn. Soc. London **157**: 176. 1946.

Cols. epiphyllous, thin, to 5 mm. diam. or confluent. Hyphae substraight to sinuous, cells mostly 20—35 × 6—8 μ, branching usually opposite at wide angles, very loosely reticulate. Ch. alternate, spreading or subantrorse, straight or slightly bent, 20—40 μ long; stc. cuneate, 5—19 μ long; hc. clavate-cylindric, entire, straight or bent, rounded at apex, 12—20 × 8—12 μ. Mh. few, separate, opposite or alternate, ampulliform, 13—22 × 6—8 μ. Ms. mostly around P., straight, simple, acute, to 400 × 7—9 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—41 × 13—17 μ.

On *Jasminum* sp., Uganda, Hansford 2814, 2836, 3201; Congo Belge, Hendrickx 2690, 3947 p. p.; Burma Butler, 1912; India, Thirumalachar 871.

(1274) *Meliola mayapeae* Stev., Illinois Biol. Monogr. 2: 48. 1916.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., thin. Hyphae substraight to undulate, branching opposite at wide angles, loosely reticulate, cells mostly 20—30 × 5—7 μ. Ch. alternate or less than 1% opposite, somewhat antrorse, usually straight, 13—18 μ long; stc. cylindric, 2—5 μ long; hc. ovoid to cylindric, entire, rounded at apex, 10—14 × 6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18 × 6—8 μ, fairly numerous. Ms. mostly grouped around P., straight, simple, obtuse, to 280 × 6—7 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to wide ellipsoid, obtuse, 4-septate, slightly constricted, 33—38 × 15—18 μ.

On *Mayapea dominguensis*, Porto Rico, Stevens 7468 (type), 7075, 8703, 822 p. p.

(1275) *Meliola jasminicola* P. Henn. var. **africana** Hansf., var. n.

Cols. amphigenous, to 3 mm. diam., dense, velvety. Hyphae sinuous to crooked, branching opposite or irregular at wide angles, densely reticulate-interwoven, cells mostly 15—30 × 5—6 μ. Ch. alternate, 15—25 μ long, straight or bent, antrorse or spreading; stc. cylindric to cuneate, 3—10 μ long; hc. subglobose, ovate, or irregularly rounded-angulose, very rarely sublobate, 9—18 × 7—13 μ. Mh. separate, alternate or opposite, subconoid to ampulliform, 15—20 × 6—8 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 500 (rarely to 540) × 7—10 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 31—39 × 13—18 μ.

On *Jasminum dichotomum*, Uganda, Hansford 3201, type; — On *J. sambac*, Gold Coast, Deighton 833; Ceylon, Herb. Peradeniya

4618; — On *J. pauciflorum*, Gold Coast, Hughes in IMI 37340, 37341, 37339 p. p.; — On *J.* sp., Philippines, Clemens 3140.

(1276) *Meliola oleicola* Doidge var. *jasmini* Ciccarone, Mycopathilogia 5: 210. 1951.

Cols. amphigenous, 2—4 mm. diam. or confluent. Hyphae opposite and acutely branched, cells 25—32×8—10 μ. Ch. alternate; hc. rarely oblong, usually irregularly angulose, 8—12×15—20 μ. Mh. opposite on separate hyphae, or mixed with ch., ampulliform, Ms. numerous, grouped around P 400×8—10 μ, straight or slightly arcuate, simple, acute. P. to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—48×16—18 μ.

On *Jasminum abyssinicum*, Abyssinia, Ciccarone, type.

Known to the present author only from the original description.

(1277) *Meliola osmanthi-aquifolii* Hara, Fungi, Nippon Fungolog. Soc., I: 2: 13. 1931.

"Spots black, orbicular, often confluent. Hyphae dark brown, septate, hyphopodiate. P. to 330 μ diam. Sp. oblong to broad cylindric, 4-sptate, constricted, 40—48×14—22 μ." (Hara, l. c.).

The accompanying Japanese description gives the following measurements: Cols. 1—2 mm. diam.; hyphopodia 14—22×9—11 μ; ms. grouped around P., to 330×7—9 μ.

On *Osmanthus aquifolius*, Japan.

This species is known to the present author only from the original description, quoted above.

Host Family 230. Apocynaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4240	Cols. very dense; hyphae substraight; hc. oblong-clavate, entire	*alyxiae*	(1278)

Asteridiella

3102.4230	Cols. minute, dense; hyphae substraight; hc. globose-ovate, entire; sp. ellipsoid	*aspidospermatis*	(1279)
3101.4230	Cols. subdense; hyphae straight or sinuous; cylindric-clavate, entire; P-cells to 12 μ high.	*strophanthi*	(1280)
3101.4230	Cols. dense; hyphae substraight to undulate; hc. subglobose-piriform, entire; P-cells conoid, to 30 μ high	*voacangina*	(1281)
3101.4220	Cols. dense; hyphae sinuous; hc. angular to sublobate	*plumeriae*	(1282)
3101.4220	Cols. subdense; hyphae straight; hc. ovate to subglobose	*voacangae*	(1343)

Meliola

3141.4224	Cols. thin; ms. irregularly branched at apex, grouped around P.	*willoughbyae*	(1283)

31¾1.4221	Cols. dense, velvety; hyphae straight; hc. narrow ovate, entire; ms. 2-4-dentate or shortly 2-furcate	*guamensis*	(1284)
3131.4331	Cols. dense, subvelvety; hyphae substraight; hc. wide ovate-clavate, entire; ms. dentate	*monilispora*	(1285)
31⅓3.4222	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-piriform, entire; ms. obtuse, acute or 2-3-dentate	*oncinotidis*	(1286)
31⅓3.3223	Cols. thin, subvelvety; hyphae sinuous; hc. ovate-piriform, entire; ms. acute or 2-4-dentate	*landolphiae*	(1287)
31⅓2.3223	Cols. thin; hyphae substraight to undulate; hc. subglobose, small, entire; ms. obtuse or 2-3-dentate	*motandrae*	(1288)
3121.4222	Cols. thin to dense, velvety; hyphae substraight to sinuous; hc. ovate-oblong, entire; ms. arcuate to uncinate, obtuse	*reflexa*	(1289)
3121.4221	Cols. dense, velvety; hyphae straight; hc. ovate-cylindric or slightly angulose; ms. uncinate, obtuse	*wardii*	(1290)
3121.3231	Cols. dense, velvety; hyphae substraight to sinuous; hc. globose-ovate, entire; ms. uncinate, obtuse	*depressula*	(1291)
3121.3221	Cols. thin, subvelvety; hyphae substraight; hc. globose-ovate, entire; ms. arcuate to coiled, obtuse	*urceolae*	(1292)
3123.3221	Cols. dense, velvety; hyphae substraight to undulate; hc. subglobose, entire; ms. arcuate to uncinate, obtuse	*wardii* var. *tabernaemontanae*	(1293)
3121.3221	Cols. dense, velvety; hyphae substraight; hc. ovate-oblong, entire; ms. uncinate, obtuse; sp. smaller	*wardii* var. *minor*	(1294)
31½1.4232	Cols. thin; hc. ovoid to cylindric; ms. straight or uncinate	*intermedia*	(1295)
3113.4222	Cols. dense, subvelvety; hyphae substraight to undulate; hc. globose to wide ovate; ms. acute	*laevipoda*	(1296)
3113.4232	Cols. dense; hyphae undulate to sinuous; hc. small, subglobose to bent ovate, entire; ms. obtuse	*isothea*	(1297)
3111.....	Setae obtuse:		
	hc. angulose to lobate:		
3111.5321	Cols. very dense; hyphae substraight; hc. clavulate, angulose, large	*hendrickxii*	(1299)
3111.4321	Cols. dense; hyphae substraight; hc. piriform or sublobate; mh. separate	*voacangae* var. *conopharyngiae*	(1300)
3111.4223	Cols. thin to subdense, subvelvety; hyphae undulate; hc. cylindric-piriform, angulose to sublobate	*landophiicola*	(1301)

3111.4221	Cols. thin to subdense; hyphae undulate; hc. subglobose, angulose	*voacangae*	(1302)
3111.3222	Cols. thin to subdense, velvety; hyphae undulate; hc. clavate, angulose	*voacangae* var. *carpodini*	(1303)
	hc. entire:		
3111.4223	Cols. thin; hyphae straight; hc. ovate to clavate	*landolphiae-floridae*	(1304)
3111.4222	Cols. thin to subdense; hyphae straight or undulate; hc. ovate-cylindric	*funtumiae*	(1305)
3111.4222	Cols. dense, subvelvety; hyphae substraight; hc. oblong-clavulate	*anodendri*	(1305a)
3111.4222	Cols. dense; hyphae sinuous; hc. ovate-cylindric; ms. few	*goniomae*	(1306)
3111.4221	Cols. subdense; hyphae sinuous; hc. ovate-cylindric; ms. mostly around P.	*tabernaemontanae* var. *major*	(1307)
3111.3224	Cols. very thin; hyphae undulate; hc. small, small, globose-ovate; ms. mostly round P.	*voacangae-foetidae*	(1308)
3111.3223	Cols. subdense, velvety; hyphae substraight; hc. cylindric to ovate	*pleioceratis*	(1309)
3111.3222	Cols. thin; hyphae crooked; hc. small, globose; ms. thinly scattered	*simillima* var. *major*	(1310)
3111.3222	Cols. thin; hyphae undulate; hc. subglobose to ovate, small; ms. around P.	*voacangae* var. *funtumiicola*	(1311)
3111.3222	Cols. thin; hyphae narrow, undulate; hc. small, ovate; ms. straight or flexuous	*modesta*	(1312)
3111.3222	Cols. subdense, subvelvety; hyphae straight to undulate; hc. ovate; ms. scattered, slightly torulose-bent below apex	*tabernaemontanae*	(1313)
3111.3221	Cols. thin to subdense; hyphae straight to undulate; hc. ovate; ms. straight	*tabernaemontanae* var. *escharoides*	(1314)
3111.3221	Cols. thin, subvelvety; hyphae undulate; hc. globose-ovate; ms. straight	*tabernaemontanae* var. *odontadeniae*	(1315)
3111.3221	Cols. dense; hyphae substraight to undulate; hc. globose-ovate; ms. mostly around P.	*malouetiae*	(1316)
3111.3221	Cols. subdense; hyphae substraight; hc. ovate-cylindric; ms. mostly around P.	*voacangicola*	(1341)
3111.3221	Cols. subdense, subvelvety; hyphae substraight; hc. small, ovoid; ms. numerous, scattered	*euopla*	(1317)
3111.3221	Cols. thin, subvelvety; hyphae straight to crooked; hc. ovate-clavate; mh. separate	*alstoniae*	(1318)
3111.3221	Cols. thin; hyphae sinuous; hc. small, subglobose; ms. scattered	*simillima*	(1319)

3111.....	Setae obtuse to acute:		
3111.4223	Cols. dense, velvety; hyphae substraight to undulate; hc. angulose-lobate	*forsteroniae*	(1320)
3111.5332	Cols. dense, velvety; hyphae substraight to undulate; hc. lobate	*carissae* var. *parsonsiae*	(1321)
3111.3222	Cols. thin to subdense; hyphae crooked; hc. small, ovoid-globose, entire; ms. flexuous to crooked, not uncinate	*mandevillae*	(1338)
3111.....	Setae acute:		
	hc. angulose to lobate:		
3111.4323	Cols. dense; hyphae straight; hc. stellate-lobate; ms. few	*alyxiae*	(1298)
3111.4223	Cols. dense, subvelvety; hyphae straight to undulate; hc. large, lobate	*carissae*	(1322)
3111.3223	Cols. dense, strongly parasitic; hyphae substraight; hc. lobate	*carissae* var. *indica*	(1323)
3111.4322	Cols. dense, velvety; hyphae straight or sinuous; hc. clavate, entire to lobate	*laevigata*	(1324)
	hc. entire:		
3111.5333	Cols. very dense, velvety; hyphae substraight to sinuous; hc. ovate-clavate	*holarrhenicola*	(1342)
3111.5323	Cols. thin, subvelvety; hyphae straight to undulate; hc. ovate-cylindric, large; ms. scattered	*melodini*	(1325)
3111.4223	Cols. thin; hyphae undulate to sinuous; hc. ovate-cylindric; ms. thinly scattered	*ichnocarpicola*	(1326)
3111.4222	Cols. dense, crustose; hyphae substraight; hc. large, ovate; ms. scattered	*strophanthicola*	(1327)
3111.4221	Cols. thin; hyphae undulate; hc. small, globose-piriform; ms. few	*baisseae*	(1328)
3111.4221	Cols. thin; hyphae undulate; hc. ovate; ms. scattered and round P.	*echitis*	(1329)
3111.3223	Cols. dense; hyphae undulate-sinuous; hc. ovoid-cylindric, usually bent; ms. scattered	*beebei*	(1330)
3111.3223	Cols. subdense, velvety; hyphae undulate; hc. ovate-clavate; ms. scattered	*amboinensis*	(1331)
3111.3222	Cols. thin; hyphae crooked; hc. globose; ms. scattered	*simillima* var. *zeylanica*	(1332)
3111.3222	Cols. thin; subvelvety; hyphae substraight to sinuous; hc. ovate-cylindric; ms. scattered	*holarrhenae*	(1333)
3111.3222	Cols. thin to subdense, velvety; hyphae undulate; hc. ovate-cylindric; ms. scattered and around P.	*tabernaemontanicola*	(1334)
3111.3222	Cols. thin to subdense; hyphae undulate; hc. ovate; ms. mostly around P.	*tabernaemontanicola* var. *luzonensis*	(1335)
3111.3222	Cols. thin; hyphae substraight; hc. ovate; ms. flexuous	*ichnocarpi*	(1336)

3111.3222 Cols. dense; hyphae substraight to undulate; hc. cylindric-clavate, elongate, often bent; ms. mostly around P. ..... *trachelospermi* (1337)

3111.3221 Cols. dense, velvety; hyphae substraight; hc. ovate-cylindric; ms. numerous ..... *moerenhoutiana* (1339)

Meliola clavatispora (1340)

(1278) *Amazonia alyxiae* Hansf., Sydowia Beih. **1**: 89. 1957.

Cols. amphigenous, to 1 mm. diam., very dense, smooth. Hyphae substraight to slightly undulate, branching alternate or irregular, acute, densely radiating-reticulate and almost solid, cells mostly 10—18× 6—7 μ. Ch. alternate, closely antrorse, straight or slightly bent, 20—28 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. oblong to clavulate, obtuse, entire, 15—21×7—10 μ. P. central, single or 2—3-aggregate and often laterally connate, rounded, flattened-globose beneath a radiate mycelial layer, slightly or not fimbriate at margin, to 400 μ diam. (internal diam. about 300 μ). Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×18—20 μ.

On *Alyxia olivaeformis*, Hawaii, Stevens 239, type (FLS).

(1279) *Asteridiella aspidospermatis* (Speg.) Hansf., Sydowia **10**: 57. 1957.

= *Meliola aspidospermatis* Speg., Anal. Mus. Nac. Buenos Aires, **32**: 361. 1924.

= *Irenina aspidospermatis* (Speg.) Stev., Ann. Mycol. **25**: 451. 1927.

Cols. amphigenous, minute, dense, smooth. Haphae substraight, cells mostly 12—28×7—8 μ, branching opposite at wide angles, densely reticulate and nearly solid. Ch. opposite save where too crowde, antrorse, straight, 13—17 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to ovate, entire, 9—13×7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—17×7—8 μ. P. in central group, globose, verrucose, to 250 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—43×17—19 μ.

On *Aspidosperma polyneuron*, Argentina, SPEG 1815, type.

(1280) *Asteridiella strophanthi* (Doidge) Hansf., Sydowia **10**: 50. 1957.

= *Meliola strophanthi* Doidge, Trans. Roy. Soc. South Africa, **5**: 729. 1917.

= *Irene strophanthi* Doidge, South African Journ. Nat. Hist. **2**: 41. 1920.

= *Irenina strophanthi* (Doidge) Stev., Ann. Mycol. **25**: 460. 1927.

Cols. mostly hyphophyllous, to 3 mm. diam., subdense to almost crustose. Hyphae straight to sinuous, branching usually opposite, acute, closely rqdiating-reticulate, cells mostly 18—27×6—9 μ. Ch.

alternate, more or less antrorse, straight or slightly bent, 20—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. cylindric to clavate, straight or slightly recurved, entire, widely rounded at apex, 13—18× 7—11 μ. Mh. mixed with ch., not numerous, opposite or alternate, ampulliform, 12—20×6—9 μ. P. scattered, verrucose, to 240 μ diam., surface cells rounded to obtusely conoid, to 12 μ high and about 25 μ diam. at base. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, constricted, 40—45×16—18 μ.

On *Strophanthus speciosa*, South Africa, PRET 1781, 9702, 17717.

(1281) *Asteridiella voacangina* Hansf., Sydowia Beih. **1**: 98. 1957.

Cols. amphigenous, to 4 mm. diam. or widely confluent, smooth, dense, strongly adherent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, closely reticulate, cells 15—20× 6—7 μ. Ch. alternate or occasionally opposite (less than 1%), subantrorse, straight or slightly bent, 14—19 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose to piriform, entire, 10—14× 9—12 μ. Mh. mixed ,opposite or alternate, ampulliform, 18—26× 9—12 μ. P. scattered, globose, rough, to 220 μ diam., surface cells obtusely c9noid, to 30 μ high. Sp. oblong, obtuse, 4-septate, constricted, 38—44×15—18 μ.

On *Voacanga* sp. Philippines, PBS 28902 (FLS).

(1282) *Asteridiella plumeriae* (Hansf. & Deight.) Hansf., Sydowia **10**: 49. 1957.

= *Irenina plumeriae* Hansf. & Deight., Mycol. Paper, IMI **23**: 53. 1948.

Cols. epiphllous, dense, to 5 mm. diam., often confluent, subcrustose, strongly parasitic, the leaf being raised beneath the colonies. Hyphae very sinuous, irregularly radiating, cells mostly 15—20× 9—10 μ, branching usually opposite, acute, densely reticulate. Ch. alternate, crowded, spreading or variously bent, 25—35 μ long; stc. cylindric to cuneate, often bent, 7—17 μ long; Hc. irregularly clavate, often bent, angulose to sinuous-lobate, 15—23×10—17 μ. Mh. separate, opposite or alternate, ampulliform, 18—25×8—10 μ. P. closely scattered, to 170 μ diam., surface cells obtusely conoid, to 25 μ high and about 30 μ diam. at the base. Sp. oblong, obtuse, 4-septate, constricted, 40—44×18—19 μ.

On *Plumeria rubra*, Sierra Leone, Deighton 513, 2352.

(1283) *Meliola willoughbyae* Zimm., Bull. Inst. Bot. Buitenzorg, **10**: 23. 1901.

Cols. amphigenous, to 10 mm. diam. Hyphae 7—8 μ thick, branching opposite, loosely reticulate. Ch. alternate; stc. 6 μ long; hc. usually somewhat bent, 15—20×8 μ. Ms. grouped around P., irregularly branched at apex, 250—2000×8—12 μ. P. verrucose, to 160 μ diam. Sp. ovate, somewhat flattened, 4-septate, constricted, obtuse, 40—45×16—18×12 μ.

On *Willoughbya firma*, Java, Zimmermann.

This is known to the present author only from the original description above; there are no specimens in Herb. Bogor.

(1284) *Meliola guamensis* Syd., Ann. Mycol. **19**: 304. 1921.

Cols. hypophyllous, to 5 mm. diam. or numerous and widely confluent, dense, velvety. Hyphae straight, branching usually opposite, acute, densely radiating-reticulate and almost solid, cells mostly 20—35×7—8 μ. Ch. alternate, closely antrorse, mostly 22—30 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. ovate with attenuate-rounded apex, entire, 13—20×9—10 μ. Mh. separate in centre of colony, mostly alternate, antrorse, ampulliform, 15—22×6—8 μ, neck elongate. Ms. numerous, scattered, straight, to 280×6—8 μ, the apex divided into 2—4 spreading, acute teeth to 20 μ long, or into 2 short branches and these 2-dentate. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×17—19 μ.

On *Ochrosia* sp., Guam I., Macgregor 586, type (IMI).

(1285) *Meliola monilispora* Gaill., Le Genre *Meliola*, 1892, p. 101.

Cols. amphigenous, mostly hypophyllous, to 2 mm. diam., dense. Hyphae substraight, cells mostly 10—17×7—9 μ, branching usually opposite at wide angles, closely reticulate and almost solid in centre. Ch. alternate. straight or bent, subantrorse, 20—28 μ long; st. cylindric to cuneate, 4—9 μ long; hc. wide ovate to piriform, entire, 15—19×10—15 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, to conoid, 15—24×7—9 μ. Ms. fairly numerous, scattered, straight, to 280×9—10 μ, apex 2—6-dentate to 9 μ teeth rather obtuse. P. scattered, verrucose, to 210 μ diam. Sp. broadly ellipsoid, obtuse, 4-septate, constricted, 42—49×19—23×15—16 μ.

On *Apocynaceae* indet. (? *Strophanthus* sp.) Congo Francaise, Thollon, type (O); Uganda, Hansford 1969.

(1286) *Meliola oncinotidis* Doidge, Bothalia **4**: 851. 1948.

Cols. epiphyllous, dense, to 1 mm. diam., velvety. Hyphae substraight to undulate, cells mostly 25—30×7—8 μ, branching usually opposite at wide angles, densely reticulate and almost solid in centre. Ch. alternate or to 30% opposite, straight or bent, spreading, 15—24 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. ovate, cylindric or piriform, straight or slightly bent. entire, widely rounded at apex, 10—15×9—11 μ. Mh. mixed with ch., ampulliform, 15—20×6—9 μ, opposite or alternate. Ms. numerous, straight, to 500×8—9 μ, apex simple and obtuse to subacute, or more commonly 2—3-dentate to 6 μ. P. in close central group, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 39—45×14—16 μ.

On *Oncinotis inandensis*, South Africa, PRET 33509, type, 9722. — ? On *O. nitida*, Cameroons, Zenker 2607-a (K), with setae mostly around P., simple, straight, obtuse, immature.

(1287) *Meliola landolphiae* Hansf., Journ. Linn. Soc. London, **51**: 276. 1937.

Cols. epiphyllous, thin to 5 mm. diam., subvelvety. Hyphae sinuous, cells 22—35×6—7 μ, branching opposite, acute, closely reticulate. Ch. opposite or alternate, spreading, 14—20 μ long. mostly straight; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to cylind4ric, entire, rounded at apex, 8—14×8—10 μ. Mh. opposite, ampulliform, on separate hyphae in centre of colony. Ms. fairly numerous. scattered, straight, to 700×9 μ, apex simple and acute or mostly 2—4-dentate to 12 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 34—38×12—16 μ.

On *Landolphia* sp., Uganda, Hansford 1853 (type), 2492, 2603; — On *Oncinotis erlangeri*, Uganda, Hansford 2589, 3334, 3340; — On *O. ?campanulata*, Gold Coast, Hughes in IMI 44394-b.

(1288) *Meliola motandrae* Hansf., Proc. Linn. Soc. London **143**: 10. 1941.

Cols. epiphyllous. thin, usually widely confluent. Hyphae straight, branching opposite at wide angles, loosely reticulate, cells mostly 12—35×6 μ. Ch. opposite, rarely alternate, spreading or antrorse, 11—17 μ long; usually straight; stc. cylindric, 2—5 μ long; hc. subglobose to wide ovate, entire, 8—12×7—10 μ Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—8 μ. Ms. thinly scattered, straight, to 600×7—8 μ, apex obtuse, subacute or more often 2—3-dentate to 8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—35×12—15 μ.

On *Motandra guineensis*, Uganda, Hansford 2451 (type), 2569, 3606; Gold Coast, Deighton CB 964, Hughes in IMI 44462, 39563, 39559, 39564, 39565, 39566, 39567, 39570; — On *Oncinotis* sp., Uganda, Hansford 3132, 3285.

(1289) *Meliola reflexa* Hansf., Proc. Linn. Soc. London **153**: 11. 1941.

= *Meliola funtumiae* Beeli var. *hamata* Hansf. & Stev., Journ. Linn. Soc. London **51**: 274. 1937.

Cols. amphigenous, thin to dense, velvety, to 5 mm. diam. Hyphae substraight to sinuous, branching opposite, acute, loosely to densely reticulate and sometimes almost solid, cells mostly 20—30×6—8 μ. Ch. alternate, subantrorse, straight or slightly bent, 15—25 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. ovate to clavate or oblong, rounded at apex, entire, 11—16×7—11 μ. Mh. mixed with ch., mostly in centre of colony, opposite or mostly alternate, ampulliform. Ms. numerous, closely scattered, to 480×6—9 μ, simple, obtuse, widely arcuate to uncinate, sometimes subtorulose below apex. P. scattered, verrucose, to 230 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 38—48×14—17 μ.

On *Funtumia* sp., Uganda, Hansford 2343 (type), 1433 (type of

M. funtumiae var. *hamata*), 1975, 2666, 2646, 2800; — On *F. elastica*, Sierra Leone, Deighton 2385; Gold Coast, Hughes in IMI 39843, 39869; Congo Belge, Pynaert 239 (BRUX); — On *F. africana*, Gold Coast, Deighton CB 871, Hughes in IMI 44015, 39871.

(1290) *Meliola wardii* Stev., Ann. Mycol. **26**: 213. 1928.

Cols. amphigenous, to 10 mm. diam., dense, velvety. Hyphae straight, branching opposite, close, acute, densely reticulate and almost solid, cells mostly 12—17×7—9 μ. Ch. rather closely crowded, more or less antrorse, straight or slightly bent, 12—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate to cylindric, entire or slightly rounded-angulose above, sometimes truncate at apex, 9—14×8—11 μ. Mh. opposite or alternate, ampulliform or conoid, 15—20×8—10 μ. Ms. numerous, scattered, to 230×8—10 μ, obtuse, simple, broadly to closely uncinate in upper part, sometimes coiled, thick walled. P. scattered, nearly smooth, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—50×18—20×15 μ.

On *Maïouetia panamensis*, Stevens 184 (type), 1287).

(re-described from Stevens' own slide of the type).

(1291) *Meïioïa depressula* Syd., Ann. Mycol. **15**: 184. 1917.

Cols. amphigenous, to 3 mm. diam., dense to crustose, velvety, causing invagination of the leaf. Hyphae substraight to sinuous, branching opposite at wide angles, very densely reticulate and nearly solid, cells mostly 15—25×5—7 μ. Ch. alternate, spreading or antrorse, straight or slightly bent, 13—18 μ long; stc. cuneate, 3—6 μ long; hc. globose to wide ovate, entire, 10—13×9—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 14—20×6—8 μ. Ms. numerous, closely scattered and grouped around P., simple, obtuse, to 250×6—8 μ, uncinate. P. scattered closely, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—35×10—12 μ.

On *Urceola imberbis*, Philippines, Baker 548 (type), 3122, PBS 548; — On *U. javanica*, Java, BO 5048 p. p.; Sumatra, Rimburgh in BO 7441.

(1292) *Meliola urceolae* Hansf., Reinwardtia **3**: 78. 1954.

Cols. hypophyllous, to 5 mm. diam., rather thin, thinly velvety, those on upper surface smaller and somewhat dense. Hyphae substraight, branching usually opposite at acute angles, loosely to rather closely radiating-reticulate, cells mostly 20—35×7—8 μ. Ch. alternate, spreading or subantrorse, usually straight, 17—22 μ long; stc. cylindric, to cuneate, 5—9 μ long; hc. globose to wide ovate, entire, 12—15×10—13 μ. Mh. mixed with ch., alternate, ampulliform, 17—25×7—10 μ. Ms. thinly scattered and grouped around P., erect, simple, obtuse, broadly arcuate, uncinate or loosely coiled in upper half, to 270×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 34—39×14—16×11—13 μ.

On *Urceola javanica*, Java, BO 5048 p. p., type (mixed with *M. depressula*).

(1293) *Meliola wardii* Stev. var. *tabernaemontanae* Hansf., Sydowia **11**: 61. 1958.

Cols. amphigenous, to 3 mm. diam., dense, velvety. Hyphae substraight to undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate or opposite, subantrorse, straight or slightly bent, 13—18 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. subglobose, entire, 9—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19×7—8μ. Ms. numerous, scattered, to 250×9—10 μ, broadly arcuate to uncinate above, simple, obtuse, thick-walled. P. scattered, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×13—15× 11 μ.

On *Tabernaemontana* sp., British Guiana, Stevens 503 (type), 474, 452 (FLS); Vezezuela, Kern & Toro 1735 (CUP).

(1294) *Meliola wardii* Stev. var. *minor* Hansf., Sydowia 11: 61. 1958.

Cols. amphigenous, mixed with those of the type, dense, velvety, to 2 mm. diam. Hyphae substraight, branching opposite at wide angles, closely reticulate, cells mostly 10—15×6—7 μ. Ch. alternate, crowded, antrorse, straight or slightly bent, 14—18 μ long; stc. cuneate, 3—5 μ long; hc. ovate to oblong, entire, 10—14×7—9 μ. Mh. separate, opposite or alternate, ampulliform to conoid, 15—20×6—8 μ. Ms. few to numerous, scaattered, simple, uncinate, obtuse, to 230×8—9 ,5μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—36×13—15 μ.

On *Malouetia panamensis*, Panama, Stevens 1287 p. p., type (FLS).

(1295) *Meliola intermedia* Gaill., Le Genre *Meliola*, 1892, p. 94.

Cols. amphigenous, thin, to 8 mm. diam. Hyphae 7—8 μ thick. Ch. alternate; stc. short; hc. cylindric to ovoid, entire, 15—18× 12—14 μ. Mh. few, paler, ampulliform. Ms. straight, or others uncinate, 350—500×10—12 μ, opaque, pellucid and torulose above. P. scattered, glabrous, to 300 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—42×13—17 μ.

On *Apocynaceae* indet., Congo Francaise, Thollon 31, type.

The present writer has been unable to locate authentic material of this species. Gaillard also mentioned Thollon 40, on *Rubiaceae* indet., as belonging here, but examination has shown this to be *M. ghesquierei* (no. 1409, below).

Until the type can be discovered, *M. intermedia* must remain a very doubtful species; judging from other species known from Tropical Africa, it is possible that the description includes *M. reflexa*

Hansf., and *M. funtumiae* Beeli, which commonly occur in mixed infection on the same leaves of *Funtumia* spp.

(1296) *Meliola laevipoda* Speg., Rev. Argent. Hist. nat. **1**: 77. 1891. (3113.4222)

= *Meliola membranacea* Starb., Bih. Kongl. Svensk. Vetensh. Akad. Handl. **25**: 21. 1899.

Cols. amphigenous, dense, subvelvety, to 4 mm. diam. or widely confluent. Hyphae substraight, branching close, opposite at wide angles, forming a solid mat in older colonies, cells mostly 15—20 × 6—8 μ. Ch. opposite or alternate in varying proportions, spreading or subantrorse, straight or slightly bent, 14—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. entire, globose to wide ovate, 10—14 × 8—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20 × 7—10 μ. Ms. thinly scattered, straight, simple, acute, to 400 × 8—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—47 × 16—18 μ.

On *Aspidosperma* sp., Paraguay, Balansa 3589, type; — On *A. quebracho*, Brazil, Malme, type of *M. membranacea* (S); Argentina, Herb. Fitopat. Div., Buenos Aires 1122.

(1297) *Meliola isothea* Syd., Ann. Mycol. **24**: 303. 1926.

Cols. amphigenous, dense, to 3 mm. diam. Hyphae undulate to flexuous, branching close, opposite at varying angles, densely reticulate, cells mostly 15—20 × 6—7 μ. Ch. alternate or to 10% opposite, straight or often bent, 9—16 μ long; stc. cylindric, 2—3 μ long; hc. subglobose to bent ovate, usually wider than long, entire, 8—12 × 8—13 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 15—20 × 7—9 μ. Ms. mostly grouped around P., straight, simple, obtuse, to 320 × 8—11 μ, attenuate to about 3 μ at apex. P. scattered, verrucose, to 230 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 34—41 × 14—16 μ.

On *Tabernaemontana citrifolia*, Costa Rica, Sydow, Fung. costaric. 131 (type), 132.

(1298) *Meliola alyxiae* Stev., Bull. Bishop Mus. **19**: 30. 1925.

Cols. epiphyllous, rarely amphigenous, to 3 mm. diam., dense, strongly adherent and leaving a brown spot visible through the leaf. Hyphae straight, branching usually opposite, acute to wide, densely reticulate and almost solid, cells mostly 15—20 × 8—10 μ. Ch. alternate, usually straight and antrorse, 18—30 μ long; stc. cuneate, 4—10 μ long; hc. stellate-lobate, very irregular in shape, 12—22 × 13—21 μ. Mh. rare, mixed with ch., mostly alternate, conoid to ampulliform, 15—22 × 7—10 μ. Ms. few, scattered, straight, simple, acute, to 700 × 10—12 μ. P. scattered, verrucose, to 200 μ diam., not setose. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—55 × 18—22 μ.

On *Alyxia oliaeformis*, Hawaii, Stevens 1062 (FLS, CUP), 217, 409, 514, 1075, 756 (FLS); Shear 626 (S).

In the original description Stevens gave the perithecia as bearing setae to 150 μ long, but none were found in any of the above specimens, nor in his slides prepared from them. In some collections the hc. are less lobate and more rounded than described above.

(1299) *Meliola hendrickxii* Hansf., Proc. Linn. Soc. London **157**: 176. 1946.

Cols. epiphyllous, very dense, to 5 mm. diam.. strongly adherent. Hyphae substraight, branching close, opposite at varying angles, very densely reticulate to form almost a solid plate, cells mostly 12—25× 8—10 μ. Ch. alternate, close, more or less antrorse, straight or slightly bent, 22—30 μ long; stc. cuneate to cylindric, 5—7 μ long; hc. clavate to irregular, subentire, angulose or sublobate, 17—23×15—20 μ. Mh. separate, opposite, ampulliform, 17—25×7—10 μ. Ms. few, scattered, straight or slightly bent, simple, obtuse, to 200×9—11 μ. P. scattered, each on radiate disc of exhyphopodiate hyphae, globose, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 48—52×18—22 μ.

On *Alstonia congensis*, Congo Belge, Hendrickx 716, type; Gold Coast, Deighton CB 893 p. p., Hughes in IMI 39907.

(1300) *Meliola voacangae* Hansf. var. *conopharyngiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 54. 1948.

Cols. epiphyllous, dense, to 1,5 mm. diam. Hyphae substraight to sinuous or crooked, branching opposite or irregular at varying angles, densely reticulate and almost solid in centre, cells mostly 20—30× 8—9 μ. Ch. alternate, spreading or antrorse, straight or bent, 20—23 μ long; stc. cylindric to cuneate, 5—14 μ long; hc. cylindric to clavate or irregular, entire, engulose or lobate, straight or bent, 13—22× 9—16 μ. Mh. separate, few, opposite or alternate, conoid to ampulliform, 14—22×8—10 μ. Ms. grouped around P., few, straight, simple, obtuse, to 230×7—9 μ. P. closely scattered, globose, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 37—44×17—21×13—16 μ.

On *Conopharyngia longiflora*, Sierra Leone, Deighton 2155, type, 2427, 1904; — On *Rauwolfia reflexa*, Java, BO 12107; — On *Conopharyngia durissima*, Sierra Leone, Deighton 3370-a, 1948-a; — On *C.* sp., Gold Coast, Hughes in IMI 42063, 42057; Congo Belge, Hendrickx 3630.

(1301) *Meliola landolphiicola* Hansf., Proc. Linn. Soc. London **157**: 23. 1945.

Cols. amphigenous, mostly epiphyllous, to 6 mm. diam., thin to subdense, becoming slightly velvety. Hyphae sinuous, branching opposite or irregular at wide angles, closely interwoven-reticulate, cells mostly 20—30×7—9 μ. Ch. alternate, straight or bent, more or less

antrorse, 22—28 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. cylindric to clavate, usually irregular, angulose to sublobate, straight or bent, 14—20×9—16 μ. Mh. mixed with ch., opposite, ampulliform, 17—25×8—10 μ, neck elongate. Ms. few to numerous, scattered, simple, obtuse, to 600×8—10 μ. P. loosely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 39—44×16—19 μ.

On *Landolphia ugandensis*, Uganda, Hansford 3226, type; — On *L. amoena*, Gold Coast, Hughes in IMI 44409.

(1302) *Meliola voacangae* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 284. 1938.

Cols. amphigenous, thin, to 3 mm. Hyphae substraight to undulate, branching opposite or irregular, acute, loosely to rather closely radiating-reticulate or interwoven, cells mostly 12—25×7—9 μ. Ch. alternate, straight or bent, more or less antrorse, 16—28 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. subglobose to piriform, usually rounded-angulose to rarely sublobate, 12—18×12—17 μ. Mh. mixed with ch., alternate, rarely opposite, conoid to ampulliform, 16—28×7—10 μ. Ms. thinly scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 250×7—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—48×17—20 μ.

On *Voacanga* sp., Uganda, Hansford 1475-a, type; — On *V. africana*, Sierra Leone, Deighton 1355; — On *V. obtusa*, Sierra Leone, Deighton 1970, 2353, 4834, 6381 p. p.; — On *Urceola javanica*, Sumatra, BO 7441, mixed with *M. depressula*.

The Deighton specimens from Sierra Leone differ somewhat from the type: — Cols. amphigenous, mostly epiphyllous, rather dense, to 3 mm. diam. or confluent. Hyphae substraight to slightly undulate, branching opposite, acute, rather closely radiating-reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 18—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. ovate to piriform, entire, 12—16×8—11 μ. Mh. usually separate, opposite or alternate, ampulliform, 12—15×6—7 μ. Ms. thinly scattered, and grouped around P., straight or slightly flexuous, simple, obtuse, to 280×8—10 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×14—16 μ.

The hc. here are more regular than in the type, and the spores smaller.

(1303) *Meliola voacangae* Hansf. & Stev. var. *carpodini* Hansf. & Deight., Mycol. Paper. IMI **23**: 55. 1948.

Cols. epiphyllous or hypophyllous, to 5 mm. diam., thin to subdense, thinly velvety. Hyphae substraight to undulate, branching opposite at varying angles, loosely reticulate-radiating, closer in old colonies, cells mostly 25—35×5—7,5 μ. Ch. alternate, spreading or

antrorse, 19—32 μ long; straight on upper surface, often irregularly bent on lower surface of leaf; stc. cylindric to cuneate, 5—12 μ long; hc. clavate, ovate, piriform, usually angulose to sublobate, on lower surface often bent, 14—21×7—15 μ. Mh. few, mixed with ch., alternate, ampulliform, 18—25×7—8 μ. Ms. scattered, fairly numerous, more or less straight, simple, obtuse, to 500×7—9 μ. P. scattered, verrucose, to 195 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—40×13—16×10—12 μ.

On *Carpodinus dulcis*, Sierra Leone, Deighton 1820, type; — On *C. hirsuta*, Sierra Leone, Deighton 1872; Gold Coast, Hughes in IMI 44392; — On *C. lanceolata*, Congo Belge, Vanderyst 13588 p. p., 30410, 30620, 30413 (BRUX).

(1304) *Meliola landolphiae-floridae* Hansf., Journ. Linn. Soc. London **51**: 542. 1938.

Cols. epiphyllous, to 10 mm. diam., thin, scattered. Hyphae straight, branching opposite, acute, loosely radiating-reticulate, cells 25—35×6—8 μ. Ch. alternate, rather distant, more or less antrorse, straight or slightly bent, 24—30 μ long; stc. cuneate, 4—9 μ long; hc. ovate to clavate, rounded or slightly pointed at apex, entire, 17—22×9—11 μ. Mh. few, opposite, ampulliform, mixed with ch., 19—25×7—9 μ. Ms. not numerous, mostly grouped around P., straight, simple, attenuate to obtuse apex, to 520×7—9 μ. P. scattered, verrucose or almost smooth, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted slightly, 37—40×15—17 μ.

On *Landolphia florida*, Uganda, Hansford 2324, type, 2956; — On ? *Oncinotis* sp., Uganda, Hansford 3562.

(1305) *Meliola funtumiae* Beeli, Bull. Jard. Bot. Bruxelles **7**: 95. 1920.

Cols. mostly epiphyllous, to 6 mm. diam. or confluent, thin to subdense. Hyphae straight to undulate, branching opposite, acute to wide, loosely radiating-reticulate and interwoven, cells mostly 15—25×7—8 μ. Ch. alternate, subantrorse, straight or often bent to recurved at the apex, 16—20 μ long; stc. cylindric to cuneate, 4—6 μ long; hc. ovate to cylindric, entire, often bent, 11—15×7—9 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, 15—17×7—8 μ. Ms. thinly scattered and grouped around P., straight, simple, acute, to 500×9—10 μ. P. scattered, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—46×19—21 μ.

On *Funtumia* sp., Congo Belge, Vanderyst 1621 (type), 31803, 44358 (BRUX); Cameroons, Jacques-Felix 4622 (P); — On *F. elastica*, Uganda, Hansford 1408, 1433, 2645, with ms. attenuate to 2—4 μ at obtuse apex, sp. 39—46×15—19×12—14 μ.

Beeli described the spores as 45—50×19—20 μ, but I could find none as large as this in my mount from the type; in Uganda this species usually occurs mixed with *M. reflexa*.

(1305-a) *Meliola anodendri* K. Sawada.

Cols. mostly epiphyllous, dense, subvelvety, to 2 mm. diam. or numerous and subconfluent. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 18—25×7—9 μ. Ch. alternate, or very rarely opposite, subantrorse, straight, 20—30 μ long; stc. cuneate, 4—9 μ long; hc. oblong to clavulate, entire, 16—22×10—13 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 18—20×7—8 μ. Ms. scattered, straight, simple, obtuse, to 350×8—10 μ, gradually attenuate to about 3 μ at apex. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—45×16—19 μ.

On *Anodendron affine*, Formosa, K. Sawada, type (USDA).

(Note. I have been unable to trace publication of this species).

(1306) *Meliola goniomae* Doidge, Bothalia **2**: 461. 1928.
= *Amazonia goniomae* Doidge, Bothalia **1**: 204. 1924.

Cols. amphigenous subdense to 7 mm. diam. Hyphae substraight to undulate, branching usually opposite, acute or wide, rather closely reticulate, cells most'y 20—26×6—8 μ. Ch. alternate or unilateral, straight or bent, antrorse, 20—27 μ long; stc. cylindric, 3—8 μ long; hc. cylindric to clavate, entire, widely rounded at apex, straight or bent, 12—20×8—10 μ. Mh. numerous, separate or mixed with ch., opposite, ampulliform, 12—15×5—7 μ. Ms. usually present in fully mature colonies, often absent from young colonies; scattered, few, straight or slightly flexuous, simple, obtuse, to 400×6—8 μ, very rarely 2—3-dentate. P. at first radiate in structure, becoming globose, verrucose, to 220 μ diam., surface cells rounded to obtusely conoid. Sp. cylindric, obtuse, 4-septate, constricted, 40—47×15—17 ×10—13 μ.

On *Gonioma kamassi*, South Africa, PRET 9561, 10938, 17109, 17209, 17230, 17235.

(1307) *Meliola tabernaemontanae* Speg. var. *major* Hansf., Sydowia **10**: 91. 1957.

Cols. epiphyllous, subdense, to 1 mm. diam. Hyphae sinuous to flexuous, branching opposite, acute, loosely radiating reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 19—29 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to clavate-cylindric, entire, rounded or very slightly pointed at apex, 13—21×8—10 μ. Mh. separate, opposite or alternate, squat ampulliform, 13—20×8—10 μ. Ms. mostly grouped around P., straight, simple, obtuse, to 280×8 μ. P. in central group. verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 39—45×14—16×12—14 μ.

On *Conopharyngia* sp., Congo Belge, Hendrickx 2077, type; — On *Plumiera pluvialis*, San Domingo, Ciferri, Mycofl. doming. exs. 92-bis, with spores 37—43×16—18 μ, and ms. to 400 μ long,

mh. mixed with ch.; — On *Plumiera krugii*, Porto Rico, Stevens 8018 (FLS); — On *Rauwolfia nitida*, Porto Rico, Stevens 9300, 9321 (FLS).

(1308) *Meliola voacangae-foetidae* Hansf., Reinwardtiy **3**: 77. 1954.

Cols. mostly hypophyllous, very thin, to 5 mm. diam. or confluent. Hyphae undulate to sinuous, branching opposite at acute angles, loosely radiating-reticulate, cells mostly 20—40×6—7 μ. Ch. alternate, more or less antrorse, usually straight, 12—18 μ long; stc. cylindric, 3—8 μ long; hc. globose to ovate, entire, 9—12×8—10 μ Mh. separate, opposite or alternate, ampulliform, 18—25×7—8 μ, neck elongate. Ms. mostly grouped around P., more or less straight, simple, obtuse, 200—1100×7—8 μ. P. loosely scattered, verrucose to nearly smooth, to 120 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 27—33×12—14 μ.

On *Voacanga foetida*, Java, BO 14515, type.

(1309) *Meliola pleioceratis* Hansf., Sydowia **10**: 85. 1957.

Cols. amphigenous, to 3 mm. diam. subdense, velvety. Hyphae substraight, branching opposite, acute, closely radiating-reticulate, cells mostly 25—45×6—7 μ. Ch. alternate, antrorse, straight or bent, 21—29 μ long; stc. cylindric, 5—11 μ long; hc. ovate, usually straight, sometimes slightly pointed at apex, entire, 14—20×8—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 20—31×6—8 μ. neck elongate. Ms. numerous, scattered, straight, simple, obtuse, to 750×7—9 μ. P. scattered, globose, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—38×14—15 μ.

On *Pleioceras barteri*, Gold Coast, Hughes in IMI 45072, type.

(1310) *Meliola simillima* Ell. & Everh., var. *major* Hansf., Sydowia **10**: 89. 1957.

(3111.3222)

Cols. amphigenous, to 4 mm. diam., thin, sometimes slightly velvety. Hyphae sinuous to crooked, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, spreading or antrorse, usually straight, 10—16 μ long; stc. cylindric, 2—5 μ long; hc. globose, entire, 8—11×7—11 μ. Mh. mixed with ch., opposite, ampulliform, 15—20×6—9 μ. Ms. thinly scattered, straight or flexuous, simple, obtuse, to 330×6—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted slightly, 33—40×12—15 μ.

On *Holarrhena antidysenterica*, India, Som, 1913, type. (Herb. New Delhi).

(1311) *Meliola voacangae* Hansf. & Stev. var. *juntumiicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 54. 1948.

Cols. amphigenous, thin, to 10 mm. diam. or confluent. Hyphae undulate, branching opposite at wide angles, loosely reticulate, cells

mostly 25—30×6—7 μ. Ch. alternate, antrorse, usually straight, 16—21 μ long; stc. cylindric, 4—9 μ long; hc. subglobose to clavate, entire, widely rounded at apex straight or slightly bent, 11—15× 8—11 μ. Mh. mixed with ch., few, mostly alternate, ampulliform, 14—19×7—8 μ. Ms. almost entirely grouped around P., straight, simple, obtuse, to 320×7—8 μ. P. loosely scattered, verrucose, to 160 μ diam., each on radiate subiculum of slightly paler, sinuous, exhyphopodiate hyphae. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—40×12—16 μ.

On *Funtumia africana*, Sierra Leone, Deighton 954 (type), 1947, 2048; Gold Coast, Deighton CB 848, Hughes in IMI 39870, 39871, 44563; — On *F. elastica*, Gold. Coast, Hughes in IMI 39842, 39868.

(1312) *Meliola modesta* Syd., Ann. Mycol. **24**: 304. 1926.

Cols. amphigenous, to 2 mm. diam. on upper surface, to 5 mm. on lower, often confluent, arachnoid. Hyphae substraight or very slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 25—30×5—6 μ. Ch. alternate or very rarely opposite (less than 1%, antrorse, usually straight, 13—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to ellipsoid, entire, rounded or slightly pointed at apex, 8—14×6—8 μ. Mh. separate, opposite or alternate, conoid to ampulliform, 15 18×5—8 μ. Ms. scattered, straight or flexuous, simple, obtuse, to 330×6—7 μ, gradually attenuate to 3—4 μ at apex. P. scattered, verrucose or almost smooth, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 30—36×13—15 μ.

On *Thevetia neriifolia*, Costa Rica, Sydow, Fung. exot. exs. 619, type.

(1313) *Meliola tabernaemontanae* Speg., Anal. Mus. Nac. Buenos Aires, **23**: 42. 1912.

= *Meliola wrightiae* Yates, Philipp. Journ. Sci, C. Botany, **13**: 371. 1918.

Cols. amphigenous, mostly epiphyllous, thin to subdense, sometimes subvelvety, to 2 mm. diam. Hyphae substraight to undulate, branching opposite, acute, closely radiating-reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, antrorse, straight or slightly bent, 13—19 μ long; stc. cuneate, 3—6 μ long; hc. ovate, entire, rounded or slightly pointed at apex, 10—13×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—16×6—8 μ. Ms. fairly numerous, scattered, to 220×6—7 μ. straight below, simple, obtuse, slightly torulose or bent but not uncinate near apex. P. scattered, slightly verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 29—35×14—15×12 μ.

On *Tabernaemontana hystrix*, Argentina, SPEG 536, type; — On *T. oppositifolia*, Porto Rico, Whetzel 3302 (CUP); — On *T.*

grandifolia, Panama, Stevens 874, 90, 1364, 160, 526, 1041; Costa Rica, Stevens 764 (FLS).

A general description is given of other specimens considered to belong here — it will be seen that the chief differences are in their more elongate hyphopodia and longer setae:

Cols. amphigenous, rather dense, to 3 mm. diam., thinly velvety. Hyphae straight or slightly undulate, cells 25—30×6—7 μ, branching usually opposite, acute, rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 18—24 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. narrowly ovate to cylindric, apex broadly rounded, 13—17×7—9 μ. Mh. separate or in some specimens mixed with ch., alternate or opposite, conoid to ampulliform, 13—17×6—8 μ. Ms. numerous, closely scattered, straight or slightly flexuous, not uncinate, simple, obtuse, to 400×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—36× 13—15 μ.

On *Tabernaemontana oppositifolia*, Porto Rico, Stevens 7073, 7352, 7558; — On *T. grandifolia*, Venezuela, Sydow, Fung. venez. 92; — On *T. citrifolia*, San Domingo, Ciferri, Mycofl. doming. exs. 92; Ciferri 2803, 2253 (S); — On *Rauwolfia nitida*, San Domingo, Ciferri 2780 (S); — On *Tabernaemontana amygdalifolia*, Venezuela, Muller 2148 (CUP); — On *T.* sp., Philippines, Stevens 1689; British Guiana, Stevens 592; Honduras, Standley 56176 (F); — On *Wrightia laniti*, Philippines, PBS 26757 (type of *M. wrightiae*) PBS 10618, 30284; — On *Apocynaceae* indet., Ecuador, ? Lagerheim in P.

(1314) *Meliola tabernaemontanae* Speg. var. **escharoides** (Syd.) Hansf. comb. n.

= *Irene escharoides* Syd., Ann. Mycol. **24**: 316. 1926.

= *Meliola escharoides* (Syd.) Cif., Mycopath. **7**: 128. 1954.

Cols. amphigenous, to 5 mm. diam. or confluent, thin to subdense. Hyphae substraight to undulate, branching opposite, acute to wide, loosely interwoven-reticulate, cells mostly 20—25×5—6 μ. Ch. alternate, antrorse, usually straight, 14—19 μ long; stc. cuneate, 3—6 μ long; hc. ovate, entire, 10—15×6—7 μ. Ms. few or none, only grouped around P., straight, simple, obtuse, to 180×7 μ. P. in central group, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—35×11—15 μ.

On *Tabernaemontana longipedis*, Costa Rica, Sydow, Fung. costaric. 293-a (FLS), type.

(1315) *Meliola tabernaemontanae* Speg. var. *odontadeniae* Hansf., Sydowia **10**: 92. 1957.

(3111.3221)

Cols. epiphyllous, to 5 mm. diam. or confluent, rather thin,

slightly velvety. Hyphae substraight to undulate, cells mostly 20—40 × 6—8 μ, branching opposite at wide angles, becoming rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 15—19 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose to wide ovate, entire, 12—15 × 11—13 μ. Mh. separate or mixed with ch., opposite or alternate, ampulliform, 15—20 × 7—9 μ. Ms. scattered, straight, simple, obtuse, to 280 × 7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 30—35 × 13—15 × 10—12 μ.

On *Odontadenia nitida*, Trinidad, Baker in IMI 19330, type.

Differs from the type mainly in the shape of the head cells of the capitate hyphopodia.

(1316) *Meliola malouetiae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 56. 1948.

Cols. amphigenous, mostly epiphyllous, dense, to 2 mm. diam. Hyphae substraight to undulate or flexuous, cells mostly 15—20 × 7—9 μ, branching opposite at wide angles, often subrectangular, close, densely reticulate and almost solid in centre. Ch. alternate, more or less antrorse, usually straight, 16—22 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. ovate to clavate, rounded at apex, 12—16 × 10—13 μ. Mh. scattered amongst ch., alternate, conoid to ampulliform, 14—20 × 6—8 μ. Ms. few, sometimes none, grouped around P., straight or bent near apex, not uncinate, simple, obtuse, to 170 × 7—8 μ. P. loosely grouped, each on solid radiate disc of exhyphopodiate hyphae up to about 160 μ diam., globose, rather coarsely verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 36—40 × 15—17 μ.

On *Malouetia heudelotii*, Sierra Leone, Deighton 1629, type.

(1317) *Meliola euopla* Syd. in Stev., Ann. Mycol. **26**: 254. 1928.
= *Meliola vicina* Syd., l. c. 24: 310. 1926 (non Syd. 1923).

Cols. hypophyllous, to 9 mm. diam., subdense, thinly velvety, often confluent. Hyphae substraight to undulate, cells mostly 30—40 × 4.5—7 μ, branching usually opposite at acute or wide angles, densely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 10—14 μ long, very rarely opposite (less than 1%); stc. cylindric, 2—4 μ long; hc. ovoid, straight or bent, rounded at apex, entire, 7—10 × 7—12 μ. Mh. mostly in centre of colony, mixed with ch., opposite or alternate, conoid to ampulliform, 14—18 × 7 μ. Ms. numerous, scattered, straight, simple, obtuse, to 250 × 7,5—10 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 25—36 × 12—14 μ.

On *Rauwolfia nitida*, Costa Rica, Sydow, Fung. costaric. 133, type; — On *Forsteronia* sp., Brazil, Ule, Herb. brasil. 1118 (S).

(1318) *Meliola alstoniae* Koord., Verhandl. K. Akad. Wetensch. Amsterdam, **13**: 170. 1907.

— *Meliola alstoniicola* Hansf., Recueil I.N.E.A.C., 2: 35. 1945.

Cols. amphigenous, thin, subvelvety, to 5 mm. diam. or confluent, on lower surface very strongly adherent. Hyphae on upper surface almost straight, cells 25–35×6–7 μ, branching opposite, acute, loosely reticulate. On lower surface the superficial hyphae substraight, but those closer to the leaf surface very crooked, prenetating the "valleys" between the columnar processes of the host epidermis and cuticle. Ch. alternate, antrorse, 13—21 μ long; straight or slightly bent; stc. cylindric to cuneate, 3—7 μ long; hc. clavate to ovate, 10—15×7—10 μ; on lower surface stc. cylindric, 4—25 μ long, straight or irregularly bent and sometimes 1-septate, descending between the epidermal processes; hc. more variable in shape than on the smooth upper surface of the leaf. Mh. separate, opposite or alternate, ampulliform, 13—18×6—8 μ. Ms. thinly scattered, and grouped around P., to 290×7—8 μ, straight or slightly flexuous, simple, attenuate to the narrowly obtuse apex, 2—4 μ thick. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 31—36× 12—15 μ.

On *Alstonia scholaris*, Java, Koorders, type (S); Philippines, Baker, Fung. malay. 360, Baker 2911-a, 2911, 2847, PBS 12825 (S); Stevens 1505 (FLS); — On *A. macrophylla*, Philippines, Baker 1226 (S); — On *A. congensis*, Congo Belge, Hendrickx 2386; Sierra Leone, Deighton 1984, 1523, 2309; Gold Coast, Deighton CB 893 p. p.; — On *A.* sp., Philippines, PBS 17279 (K).

(1319) *Meliola simillima* Ell. & Everh. in Hitchcock, Ann. Rept. Missouri Bot. Gard. 1898, p. 118.

Cols. amphigenous, mostly epiphyllous, rather thin, thinly velvety, to 5 mm. diam., sometimes confluent. Hyphae sinuous to crooked, cells mostly 20—40×4—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or unilateral, somewhat antrorse, straight or bent, 9—14 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 7—10×6,5—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. thinly and evenly scattered, straight, simple, obtuse, to 230×6–7 μ. P. scattered, slightly verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 24—30×9—12 μ.

On *Echites brownei*, Bahamas, Hitchcock, type; — On *Wrightia javanica*, Java, BO 10935, 12212; — On *Rauwolfia vomitoria*, Sierra Leone, Deighton 444, 1021, 985, 1220, 704, 2112; Gold Coast, Deighton CB 754, 950; — On *Holarrhena africana*, Sierra Leone, Deighton 1219, 984, 425, 425-b; — On *H. wulfsbergii*, Gold Coast, Deighton CB 804; Hughes in IMI 44384, 44385, 44386; — On *Echites* sp., Jamaica, Thaxter 6670, 7325, 7341 (F).

(1320) *Meliola forsteroniae* (Stev.) Hansf., Proc. Linn. Soc. London **160**: 129. 1948.

= *Meliola tabernaemontanae* Speg. var. *forsteroniae* Stev., Illinois Biol. Monogr. **2**: 50. 1916.

Cols. amphigenous, to 2 mm. diam., very dense, velvety. Hyphae substraight to slightly flexuous, cells mostly about 15×7—8 μ, branching close, opposite at wide angles, very densely reticulate and almost solid. Ch. alternate, subantrorse, straight or bent, 20—32 μ long; stc. cuneate to cylindric, 5—12 μ long; hc. from ovate and almost entire, to clavate and irregularly angulose to sublobate, apex rounded or truncate, 13—21×10—15 μ. Mh. separate, usually around the edge of the colony. alternate, rarely opposite, ampulliform, 15—20× 7—9 μ. Ms. numerous, scattered, straight or slightly flexuous, simple, obtuse to acute, to 900×10—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, 37—46×18—21 μ.

On *Forsteronia corymbosa*, Porto Rico, Stevens 4682, type; San Domingo, Ciferri, Mycofl. doming. exs. 153.

(1321) *Meliola carissae* Doidge var. *parsonsiae* Hansf., Proc. Linn. Soc. N.S.W., **78**: 52. 1953.

Cols. epiphyllous (or amphigenous in some collections), to 3 mm. diam. or confluent, dense, subcrustose, velvety. Hyphae straight to undulate, cells mostly 15—20×7—9 μ, branching opposite or irregular, acute, densely reticulate and almost solid. Ch. alternate, more or less antrorse, straight or variously bent, 18—30 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. clavate to cylindric, irregularly rounded-angulose to shallowly lobate, versiform, often bent, 12—23×9—18 μ. Mh. mostly on separate hyphae in centre of colony, alternate or opposite, ampulliform, 15—22×7—9 μ. Ms. numerous, scattered and grouped around P., straight, simple, subacute to acute, rarely obtuse, to 480×9—11 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—51×17—21 μ.

On *Parsonsia straminea*, Queensland, White 10, type; New South Wales, Fraser 162, 91, 129, 187, 169.

(1322) *Meliola carissae* Doidge, Bothalia **1**: 72. 1921.

Cols. amphigenous, mostly epiphyllous, to 6 mm. diam. or confluent, dense, subvelvety. Hyphae straight or undulate, cells mostly 20—30×6—8 μ. Branching opposite, acute to wide, closely reticulate. Ch. alternate or unilateral, straight or bent, spreading or antrorse, 18—30 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. versiform, ovate or very irregularly sublobate, often truncate at apex, straight or bent, 12—18(—22)×8—15(—20) μ. Mh. mixed with ch., not numerous, alternate, ampulliform, 18—20×6—7 μ. Ms. fairly numerous, scattered, straight, simple, acute when fully mature, to 700× 8—10 μ. P. scattered, minutely verrucose, to 200 μ diam. Sp. oblong

to ellipsoid, obtuse, 4-septate, constricted, 38—47×16—20 μ, the middle cell sometimes slightly the largest.

On *Carissa arduina* South Africa, PRET 9129, 10870, 12296, 12341, 12361, 12408, 14702, 17189; — On *C. grandiflora*, Gold Coast, Deighton CB 884; — On *C.* sp., India, Thirumalachar 872; — On *C. edulis*, Uganda, Hansford 2120.

(1323) *Meliola carissae* Doidge var. *indica* Hansf., Sydowia **10**: 67. 1957.

Cols. epiphyllous, dense, to 2 mm. diam., strongly parasitic, with leafspot showing through on lower surface. Hyphae substraight, branching opposite, acute, densely radiating-reticulate, cells mostly 15—25×6—8 μ. Ch. alternate, bent, 20—27 μ long; stc. cuneate, 4—7 μ long; hc. versiform, irregularly lobate, often truncate at apex, 15—20×10—16 μ. Mh. separate, few, alternate, rarely opposite, ampulliform, 13—22×6—8 μ. Ms. scattered and grouped around P., numerous, straight, simple, acute, to 650×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, slightly constricted, 35—40×15—17 μ.

On *Carissa carandatis*, Bassein, Burma, type (F).

(1324) *Meliola laevigata* Syd., Leafl. Philipp. Bot. **5**: 1537. 1912.

Cols. hypophyllous, to 10 mm. diam., dense, velvety. Hyphae substraight to undulate, branching opposite at wide angles, closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, spreading or antrorse, straight or bent, 20—30 μ long; stc. cylindric or cuneate, 5—10 μ long; hc. rarely cylindric to clavate and entire, mostly irregularly angulose to sublobate, versiform, 15—22×8—15 μ. Mh. separate, opposite or alternate. ampulliform, 15—20×7—10 μ. Ms. numerous, closely scattered, straight, simple, acute, to 700×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 42—50×19—24 μ.

On *Paralstonia* sp., Philippines, PBS 12784, type.

(1325) *Meliola melodini* Hansf., Proc. Linn. Soc. N.S.W., **78**: 51. 1953.

Cols. epiphyllous, to 2 mm. diam., rather thin, thinly velvety. Hyphae substraight to slightly undulate, branching opposite at acute angles, loosely to rather closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, more or less antrorse, straight or slightly bent, 23—35 μ long; stc. cylindric to cuneate, 6—13 μ long; hc. ovate to cylindric, entire, rounded at apex, 16—23×8—11 μ. Mh. separate, opposite or alternate, ampulliform, 15—24×6—8 μ. Ms. numerous, scattered, straight, simple, acute, to 700×9—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 45—52×19—21 μ, the middle cell often slightly the largest.

On *Melodinus australis*, New South Wales, Fraser 224, type.

(1326) **Meliola ichnocarpicola** Hansf., nom. n.

= *Meliola ichnocarpi* Hansf. & Thirum., Farlowia **3**: 295. 1948, non Stev. & Rold., 1935.

Cols. amphigenous, mostly epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae more or less undulate, cells mostly 20—40 × 5.5—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, more or less bent, spreading, 15—30 μ long; stc. cylindric to cuneate, 3—12 μ long; hc. ovate to clavate-cylindric, entire, often bent, 11—18 × 8—12 μ. Mh. few, mixed with ch., alternate or scattered, less commonly opposite, ampulliform, 16—22 × 5—9 μ. Ms. few, thinly scattered, more or less straight, simple, acute, to 1000 × 8—10 μ. P. scattered, verruculose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—41 × 14—17 μ.

On *Ichnocarpus frutescens*, India, *Thirumalachar* 856, type.

(1327) **Meliola strophanthicola** Hansf., nom. n.

= *Meliola strophanthi* Hansf., Journ. Linn. Soc. London **51**: 282. 1937, non Doidge.

Cols. epiphyllous, to 2 mm. diam., dense, crustose. Hyphae substraight to slightly undulate, branching opposite, acute, very densely reticulate and almost solid, cells mostly 12—16 × 7—9 μ. Ch. alternate, antrorse, straight or slightly bent, 18—28 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate, usually entire, rounded to slightly pointed at apex, 12—20 × 10—12 μ. Mh. numerous in centre, mixed with ch., opposite or alternate, ampulliform, 13—20 × 6—8 μ. Ms. few to numerous, always present in mature colonies, scattered closely, straight, simple, acute, to 400 × 9—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, constricted, 4-septate, 42—46 × 15—17 μ.

On *Strophanthus* sp., Uganda, Hansford 1785, type.

(1328) *Meliola baisseae* Deight., Sydowia **11**: 99. 1958.

Cols. amphigenous, scarcely visible, to 1 mm. diam., thin. Hyphae substraight to slightly undulate, cells mostly 20—30 × 6—8 μ, branching opposite a wide angles, loosely reticulate, denser in centre. Ch. alternate or extremely rarely opposite, subantrorse, usually straight, 11—16 μ long; stc. cylindric, 2—4 μ long; hc. globose to short piriform, entire, 11—13 × 8—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—19 × 6—8 μ. Ms. mostly in centre of colony, few, straight, simple, acute, to 350 × 7—9 μ. P. in central group, globose, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41 × 13—15 μ.

On *Baissea aframensis*, Sierra Leone, Deighton 4831, type.

(1329) *Meliola echitis* Hansf., Sydowia **10**: 71. 1957.

(3111.4221)

Cols. epiphyllous, to 4 mm. diam., rather thin. Hyphae slightly undulate to flexuous, cells mostly 20—40 × 6 μ, branching usually

opposite at variable angles, loosely reticulate. Ch. alternate, subantrorse, usually straight, 16—20 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. ovate, entire, 12—15×7—10 μ, often slightly pointed at apex. Mh. mixed with ch., opposite or alternate, ampulliform, 12—16×6—8 μ. Ms. thinly scattered and grouped around P., more or less straight, simple, acute, to 280×6—8 μ. P. scattered, verrucose, immature (to 140 μ diam.). Sp. oblong, obtuse, 4-septate, constricted, 37—41×14—15 μ.

On *Echites angustifolia*, San Domingo, *C*iferri 2856, type.

(1330) *Meliola beebei* Stev. Ann. Mycol. Berlin **26**: 273. 1928.

Cols. hypophyllous, subdense, to 3 mm. diam. Hyphae undulate, to sinuous, cells mostly 20—40×5—6 μ, branching opposite at wide angles, becoming closely interwoven-reticulate. Ch. alternate or unilateral, spreading, often sharply bent, 12—22 μ long; stc. cylindric, 3—8 μ long; hc. ovate to piriform, often sharply bent, entire, 10—15×7—10 μ. Mh. mixed with ch., mostly alternate, few, ampulliform, 14—20×6—7 μ. Ms. scattered, straight or slightly bent, simple, acute, to 770×9 μ. P. scattered, nearly smooth, to 130 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—37×10—12 μ.

On *Tabernaemontana* sp., British Guiana, Stevens 506, type (FLS, F).

(1331) *Meliola amboinensis* Syd., Philipp. Journ. Sci., **21**: 133. 1922.

Cols. hypophyllous, to 4 mm. diam., subdense, velvety. Hyphae undulate, branching opposite or irregular, acute, closely interwoven-reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, antrorse, straight or bent, 22—34 μ long; stc. cuneate, 6—12 μ long; hc. ovate to clavate, entire, or sometimes slightly irregularly angulose, 14—23×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. numerous, scattered, straight, simple, acute, to 600×9—10 μ. P. scattered, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×13—15 μ.

On *Aganosma* sp., Amboina, Robinson 2150 (FLS).

(1332) *Meliola simillima* Ell. & Everh., var *zeylanica* Hansf., Proc. Linn. Soc. London **158**: 35. 1946.

Cols. epiphyllous, numerous and widely confluent, subvelvety, to 1 mm. diam. Hyphae sinuous to crooked, cells mostly 15—20×5—6 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, usually straight, 10—14 μ long; spreading or antrorse; stc. cylindric to cuneate, 2—5 μ long; hc. globose, entire, 7—9 μ diam. Mh. mixed with ch., alternate or opposite, ampulliform, 12—17×5—7 μ. Ms. scattered, straight, simple, acute, to 400×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 26—32×11—13 μ.

On *Hemidesmus indicus*, Ceylon, Herb. Peradeniya 5116, type.

(1333) *Meliola holarrhenae* Hansf. & Thirum., Farlowia **3**: 294. 1948.

Cols. amphigenous, mostly epiphyllous and confluent over the leaf, thin, thinly velvety. Hyphae substraight to undulate, cells mostly 15—25×5—7 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate (less than 1% opposite), antrorse or spreading, usually straight, 14—21 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to oblong, rounded or slightly pointed at apex, entire, 11—16×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform to conoid, 15—25×5—7 μ, neck elongate. Ms. scattered, fairly numerous, straight, simple, acute, to 450×8—9 μ. P. scattered, verruculose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 30—38×12—15 μ.

On *Holarrhena antidysenterica*, India, Thirumalachar s. n., type.

(1334) *Meliola tabernaemontanicola* Hansf. & Thirum., Farlowia **3**: 298. 1948.

Cols. epiphyllous, rarely also hypophyllous, thin to subdense, to 4 mm. diam. or numerous and confluent, velvety. Hyphae substraight, to slightly undulate, cells mostly 20—25×6—7 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or very rarely opposite, more or less antrorse, usually almost straight, 15—24 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. ovate to cylindric with rounded to somewhat pointed apex, 12—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—8 μ. Ms. numerous, scattered and grouped around P., straight or slightly bent, simple, acute, to 450×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 30—36×13—15 μ.

On *Tabernaemontana* sp., India, Thirumalachar 860, type.

(1335) *Meliola tabernaemontanicola* Hansf. & Thirum. var. *luzonensis* Hansf., Sydowia **11**: 59. 1958.

Cols. epiphyllous, to 1 mm. diam., thin to subdense. Hyphae substraight to slightly undulate, branching opposite, acute or wide, radiating-reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 20—25 μ long; stc. cuneate, 4—8 μ long; hc. ovate, rounded to slightly pointed at apex, entire, 13—18×8—10 μ. Mh. separate, alternate, ampulliform, 13—18×6—8 μ. Ms. mostly grouped around P., straight, simple, acute, to 350×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—37×15—17 μ.

On *Tabernaemontana* sp., Philippines, Stevens 788 (type), 1689 (FLS).

(1336) *Meliola ichnocarpi* Stev. & Rold., Philipp. Journ. Sci. **56**: 72. 1935.

Cols. to 5 mm. diam. or confluent over the leaf, thin, epiphyllous.

Hyphae substraight or slightly undulate, branching opposite, acute, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, spreading or subantrorse, straight or slightly bent, 12—18 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose to ovate, entire, broadly rounded at apex, 8—13×7—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—19×5—6 μ. Ms. scattered and grouped around P., straight or somewhat flexuous, simple, acute or obtuse, to 500×7 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—33×13—14 μ.

On *Ichnocarpus volubilis*, Philippines, Stevens 1465, type, 722-a; — On *Aganosma acuminata*, Philippines, PBS 23932, (FLS).

(1337) *Meliola trachelospermi* Yates, Philipp. Journ. Sci., C. Botany, **13**: 370. 1918.

Cols. amphigenous, to 2 mm. diam. or numerous and widely confluent, dense. Hyphae substraight to undulate or flexuous, cells mostly 20—30×7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, subantrorse, straight or bent, sometimes strongly recurved, 20—30 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. oblong with rounded apex, entire, straight or bent, 13—20×8—12 μ. Mh. mostly separate, opposite or alternate, ampulliform, 14—18×6—9 μ. Ms. grouped around P. and thinly scattered over colony, straight, simple, acute, to 400×8—9 μ. P. scattered, verruculose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 34—40×14—17 μ.

On *Trachelospermum* sp., Philippines, PBS 29813, type (S).

(1338) *Meliola mandevillae* Stev., Ann. Mycol. **26**: 245. 1928.

Cols. amphigenous, to 3 mm. diam., thin to subdense. Hyphae sinuous to crooked, cells mostly 20—25×6—8 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 14—18 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose to ovate, rounded at apex, entire, 10—14×9—11 μ. Mh. mixed with ch., few, ampulliform, 15—19×6—8 μ. Ms. mostly around P., flexuous to crooked, not uncinate, simple, obtuse to subacute, gradually attenuate to apex about 3 μ thick; in hypophyllous colonies to 700 μ long. P. scattered, slightly verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—40×14—15 μ.

On *Mandevilla* sp., British Guiana, Stevens 626, type; Panama, Stevens 102, 553; — On *M. hirsuta*, Trinidad, ICTA 385, 1337, 1889.

(1339) *Meliola moerenhoutiana* Mont. in Sagra, Hist. Cuba, 1842, p. 327.

Cols. amphigenous, to 2 mm. diam., dense, velvety. Hyphae substraight, cells mostly 10—15×5—7 μ, branching opposite or irregular at wide angles, closely reticulate and almost solid. Ch. alternate or unilateral, crowded, slightly antrorse, straight or bent,

14—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. versiform, from subglobose to ovate or cylindric with rounded or slightly clavate apex, 9—15×6,5—9 μ. Mh. separate, mostly opposite, ampulliform, 10—15×7—8 μ. Ms. numerous, scattered closely and grouped around P., straight, simple, acute, to 280×7—8 μ. P. scattered, verruculose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 34—39× 15—16 μ. *A*

On *Alyxia stellata*, Tahiti, Moerenhout s. n., type (P).

(1340) "*Meliola clavatispora* Speg.", Bol. Acad. Nac. Cienc. Cordoba, **11**: 500. 1889.

= *Meliolinopsis clavatispora* (Speg.) Beeli, Bull. Jard. Bot. Bruxelles, **7**: 119. 1920.

Cols. epiphyllous to 3 mm. diam. or confluent, dense, smooth, heavily parasitised by several different fungi, including *Phaeophragmeriella* sp., of which the perithecia and spores were included in the original description. Hyphae substraight to slightly undulate, branching opposite or irregular, closely radiating-reticulate, cells mostly 20—30×8—9 μ. Ch. alternate, antrorse, straight or bent, 30—40 μ long; stc. cuneate, 6—15 μ long; hc. clavate, irregularly angulose to sublobate, versiform, 20—28×13—21 μ. Mh. not seen. No setae or perithecia now remain on the type specimen. Spores ellipsoid, obtuse, 4-septate, constricted, 60—68×30—35 μ.

On *Apocynaceae* indet., Brazil, Puiggari 1701, type (SPEG 520).

This is very different from any species recorded on this host family, but in view of the incomplete material, it cannot be assigned to any genus in the present writer's classification.

(1341) *Meliola voacangicola* Hansf., Sydowia **11**: 60. 1957.

(3111.3221)

Cols. epiphyllous, to 3 mm. diam., dense, sometimes confluent. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 20—25×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 18—25 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. ovate to piriform, entire, apex widely rounded, 12—16×8—11 μ. Mh. separate, opposite or alternate, few, 15—18× 6—7 μ. Ms. thinly scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 280—8×10 μ. P. closely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×14—16 μ.

On *Voacanga africana*, Sierra Leone, Deighton 1335, type, (IMI 23412).

(1342) *Meliola holarrhenicola* Deight., Sydowia 11: 106. 1957.

Cols. amphigenous, mostly epiphyllous, very dense, velvety, to 4 mm. diam. or confluent. Hyphae substraight to sinuous, branching acute, alternate or opposite, very densely reticulate and neatly solid in centre, cells mostly 20—30×7—9 μ. Ch. alternate or very rarely

opposite antrorse, straight or bent, 20—30 μ long; stc. cylindric, straight or slightly bent, 3—10 μ long; hc. ovate to clavate, straight or slightly bent, entire to angulose, 14—20×10—14 μ. Mh. mixed with ch., alternate or opposite, narrowly ampulliform, 20—25×7—8 μ. Ms. very numerous, scattered, straight or slightly curved, simple, acute or subacute to 650×8—12 μ. P. scattered, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—58×20—24×15—18 μ.

On *Holarrhena africana*, Sierra Leone, Deighton 5107-a, type (IMI 51803-a).

The hyphopodia and hyphae are often closely adpressed into thalloid strands.

(1343) *Asteridiella voacangae* Deight., Sydowia **11**: 94. 1957. (3101.4220)

Cols. amphigenous, mostly epiphyllous, smooth, subdense, to 1,5 mm. diam. Hyphae straight, branching opposite, wide, closely reticulate, cells mostly 10—20×6—9 μ. Ch. alternate, closely antrorse, straight or antrorsely bent, 14—20 μ long; stc. cylindric, 3—7 μ long; hc. subglobose to ovate, entire, straight, 10—16×10—12 μ. Mh. separate, opposite or alternate, ampulliform 14—18×6—8 μ. P. scattered, to 180 μ diam., surface cells obtusely conoid, to 15 μ high. Sp. oblong, obtuse, 4-septate, constricted, 36—42×14—17×12—13 μ.

On *Voacanga obtusa*, Sierra Leone, Deighton 3282, type (IMI 40245-a), 1970 p. p., 6381 p. p., 2353 p. p.

In most collections this occurs mixed with *Meliola voacangae* Hansf. & Stev.

Host Family 231. Asclepiadaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3131.4233	Cols. amphigenous or caulicolous; hyphae substraight; hc. oblong, entire; ms. 2-6-dentate	*odontochaeta*	(1344)
31 3.4232	Cols. dense, velvety; hyphae substraight; hc. ovate-clavate, entire; ms. obtuse, subacute or 2-3-dentate	*hoyae*	(1345)
3111.4222	Cols. dense, subvelvety; hyphae undulate; hc. large ovate-clavate, entire; ms. obtuse	*asclepiadacearum*	(1346)
3111.4222	Cols. dense, velvety; hyphae substraight; hc. ovate to subangulose; ms. obtuse	*asclepiadacearum* var. *brasiliensis*	(1347)
3111.4222	Cols. dense, subcrustose, velvety; hyphae sinuous; hc. large, ovate or angulose; ms. acute	*secamonis*	(1348)

3111.4222	Cols. thin; hyphae straight or undulate; hc. ovate, entire, large; ms. obtuse	*hughesiana*	(1349)
3111.3222	Cols. thin; hyphae substraight; hc. ovate to cylindric, smaller; ms. acute	*congoensis*	(1350)
3111.3222	Cols. dense, subvelvety; hyphae substraight to undulate; hc. oblong, entire; ms. obtuse to subacute	*telosmae* var. *bogoriensis*	(1351)
3111.3221	Cols. dense, subvelvety; hyphae substraight; hc. small, ovate, entire; ms. acute	*telosmae*	(1352)
3111.3221	Cols. thin to subdense, subvelvety; hyphae substraight; hc. small, subglobose to ovate, entire; ms. obtuse	*telosmae* var. *tylophorae*	(1353)

(1344) *Meliola odontochaeta* Syd., Philipp. Journ. Sci. **21**: 136. 1922.

Cols. amphigenous or caulicolous, to 4 mm. diam. or confluent. Hyphae substraight to slightly undulate, 7—8 μ thick. Ch. alternate, 22—28 μ long; hc. oblong, straight or bent, 10—13 μ wide, entire; stc. short. Mh. opposite, few, 20—26×8—10 μ. Ms. numerous, straight or slightly bent, to 800×10—12 μ, apex 2—6-dentate to 12 μ, or simple and obtuse (immature). P. to 220 μ diam. Sp. oblong, obtuse, 4-septate, 44—50×16—20 μ, the middle cells wider.

On *Dischidia* sp., Amboina, Robinson 2072, type (not seen by present author).

(1345) *Meliola hoyae* Sacc., Atti Accad. Van.-Trent.-Istr., III: **10**: 60. 1917.

Cols. epiphyllous, dense, numerous and widely confluent, velvety. Hyphae substraight, cells mostly 15—20×7—8 μ, branching opposite or irregular at wide angles, densely reticulate and nearly solid in centre. Ch. opposite or alternate, spreading or subantrorse, straight or bent, 15—24 μ long; stc. cylindric, 4—8 μ long; hc. ovate to clavate, entire, rounded at apex, often bent, 12—18×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—23×7—9 μ. Ms. closely scattered, straight, simple, obtuse, subacute or 2—3-dentate to 5 μ, to 370×9—10 μ. P. scattered, verrucose, to 210 μ diam. Sp. ellipsoid, obtuse, 4-septate, rather strongly constricted, 42—48× 17—19×13—15 μ.

On *Hoya luzonensis*, Philippines, Baker 1842, type; PBS 25128 (FLS); — On *H. carnosa*, Formosa, Yamamoto;

(1346) *Meliola asclepiadacearum* Hansf., Proc. Linn. Soc. London **157**: 22. 1945.

Cols. epiphyllous, dense, subvelvety, to 5 mm. diam., sometimes on a purplish leafspot. Hyphae substraight to undulate, cells mostly 25—30×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, 20—30 μ long, spreading to antrorse, straight or slightly bent; stc. cylindric to cuneate, 5—12 μ long; hc. ovate to clavate-cylindric, entire, rounded at apex, 15—19×9—12 μ. Mh. few, mixed

with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. fairly numerous, scattered, straight, simple, obtuse, to 330×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to narrowly ellipsoid, obtuse, 4-septate, constricted, 45—49×15—18 μ.

On *Cynanchum abysinicum* var. *tomentosum*. Uganda, Hansford 3337, type.

(1347) *Meliola asclepiadacearum* Hansf. var. *brasiliensis* Hansf., Sydowia **11**: 52. 1958.

(3111.4222)

Cols. mostly hypophyllous, dense, velvety, to 3 mm. diam. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 15—25×7—8 μ. Ch. alternate, antrorse, straight or slightly bent, 20—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate, entire or sometimes slightly angulose, 13—18×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×6—8. Ms. scattered and grouped around P., straight, simple, obtuse, to 330×8—9,5 μ. P. scattered, globose, verrucose, to 200 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—48×16—18,5 ×14—15 μ.

On *Asclepias* sp., Brazil, Maia in IMUR 5705, type.

(1348) *Meliola secamonis* Hansf., Proc. Linn. Soc. London **156**: 106. 1944.

Cols. amphigenous, mostly epiphyllous, dense, subcrustose, velvety, to 3 mm. diam. Hyphae sinuous, cells mostly 15—20×6—8 μ, branching opposite at wide angles, densely reticulate and almost solid. Ch. alternate, spreading or antrorse, straight or slightly bent, 17—26 μ long; stc. cuneate or cylindric, 3—9 μ long; hc. subglobose, ovate or clavate, entire or angulose, rarely sublobate, straight or slightly bent, 15—21×10—13 μ. Mh. few to numerous, mostly on separate hyphae, opposite or alternate, ampulliform, 14—20×7—8 μ. Ms. numerous, scattered, straight, simple, acute, to 450×7—9 μ. P. in loose central group, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, rather deeply constricted, 37—45×14—17×12—15 μ.

On *Secamone platystigma*, Uganda, Hansford 3189 (type), 3249; — On *S. myrtifolia*, Sierra Leone, Deighton 1917, 1761; Hughes in IMI 43639, 43640; Gold Coast, Deighton CB 1010.

(1349) *Meliola hughesiana* Hansf., Sydowia **10**: 76. 1957.

Cols. amphigenous, rather thin, to 3 mm. diam. or confluent. Hyphae substraight or slightly sinuous, cells mostly 20—30×6—7 μ, branching opposite at acute angles, loosely radiating-reticulate and interwoven. Ch. alternate, more or less antrorse, straight or slightly bent, 21—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate, widely rounded or slightly pointed at apex, entire, 13—20× 9—11 μ. Mh. separate, mostly alternate, ampulliform, 14—20×6—9 μ. Ms. scattered, straight, simple, obtuse, to 430×8—9 μ. P. scattered,

verrucose, to 180 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 37—44×14—17 μ.

On *Telosma africana*, Gold Coast, Hughes in IMI 49164-a, type.

(1350) *Meliola congoensis* (Beeli) Hansf., comb. n.

= *Meliola perpusilla* Syd. var. *congoensis* Beeli, Bull. Jard. Bot. Bruxelles, **7**: 89. 1920.

Cols. epiphyllous, to 3 mm. diam., thin to subdense. Hyphae undulate, branching opposite at acute to wide angles, loosely to rather closely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 14—19 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. ovate, widely rounded at apex, entire, 11—15×7—9 μ. Mh. separate, alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. thinly scattered and grouped around P., straight, simple, acute, to 400×7—8 μ. P. scattered, verrucose, to 140 μ diam. (Beeli, to 180 μ diam.). Sp. cylindric, obtuse, 4-septate, constricted, 28—34×13—15 μ

On *Asclepiadaceae* indet., Congo Belge, Vanderyst 2744 (type), 3068 (BRUX); — On *Tylophora* sp., Uganda, Hansford 2353, 2440; — On *Pergularia* sp., Uganda, Hansford 3042; — On *Secamone frutescens*, South Africa, PRET 14958.

(1351) *Meliola telosmae* Rehm var. **bogoriensis** Hansf., nom. n.

= *Meliola perpusilla* Syd. var. *bogoriensis* Hansf., Sydowia Beih. **1**: 113. 1957.

Cols. epiphyllous, dense, subvelvety, to 2 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite or irregular, acute, closely radiating-reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, antrorse, straight or slightly bent, 15—22 μ long; stc. cylindric, 3—6 μ long; hc. cylindric with rounded apex, straight or slightly bent, entire, 12—17×6—8 μ. Mh. few, separate, opposite or alternate, ampulliform, 14—18×7—8 μ. Ms. numerous, scattered and grouped around P., straight or slightly bent, simple, obtuse to subacute, to 480×7—9 μ. P. in loose central group, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—34×12—15 μ.

On *Asclepiadaceae* indet., Bogor, Java, type in BRUX; also in Herb. Hoehnel, leg. Raciborski (F).

(1352) *Meliola telosmae* Rehm, Philipp. Journ. Sci, C. Botany, **8**: 392. 1913.

= *Meliola perpusilla* Syd., l. c. **8**: 480. 1913.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 15—20×5—6 μ, branching acute, opposite, closely radiating-reticulate, sometimes in parallel strands. Ch. alternate, more or less closely antrorse, usually straight, 12—22 μ long; stc. cuneate to cylindric, 3—8 μ long; hc. subglobose, ovate or cylindric, more or less pointed at apex, entire, straight, 9—16×6—9 μ. Mh. separate, opposite or mostly alternate,

ampulliform to conoid, 12—21×5—8 μ. Ms. numerous, straight, simple, acute, to 300×7—8 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, slightly constricted, 28—35×11—13 μ.

On *Telosma procumbens*, Philippines, Baker 699 (type); Baker, Fung. malay. 257, PBS 23731 (S); Stevens 1639; — On *Tylophora* sp., Philippines, PBS 20257 (type of *M. perpusilla*), Baker, Fung. malay. 366; PBS 35936.

(1353) *Meliola telosmae* Rehm var. *tylophorae* Hansf., Sydowia 9: 50. 1955.

Cols. epiphyllous, thin to subdense, thinly velvety, to 4 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 20—30×5—7 μ, branching opposite, acute, loosely to closely reticulate-interwoven. Ch. alternate, more or less antrorse, usually straight, 12—19 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. entire, from subglobose to usually ovate with widely rounded apex, 9—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—16×7—8 μ. Ms. fairly numerous, scattered and grouped around P., more or less straight, simple, obtuse, to 240×7—8 μ, slightly attenuate to apex. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 26—32×11—12 μ.

On *Tylophora perrottetiae*, Philippines, Baker 2854-a, type (S).

Host Family 232. Rubiaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.3230	Cols. thin to subdense; hyphae substraight to sinuous; hc. subglobose, entire	*psychotriae*	(1354)
3101.4240	Cols. thin to dense; hyphae substraight; hc. oblong, entire	*polypoda*	(1355)
3101.4240	Cols. thin to subdense; hyphae substraight to undulate, hc. subglobose, entire	*psychotriae* var. *major*	(1356)

Irenopsis

(?)3401.3120	Cols. thin; hyphae undulate; hc. globose-ovate, entire; ps. few, obtuse, to 250 μ	*bayamonensis* var. *guettardae*	(1357)
3¾01.3220	Cols. dense; hyphae straight to undulate; hc. subglobose, crenulate to sublobate; ps. 8—15, straight or bent to twisted at apex, obtuse, to 125 μ	*chiococcae*	(1358)

Asteridiella

3101.5320	Cols. dense, minute; hyphae undulate to crooked; hc. globose-piriform, entire to sublobate.	*palicoureae*	(1359)
3101.4320	Cols. dense; hyphae straight; hc. large, lobate	*sarcocephali*	(1360)
3101.4330	Cols. dense; hyphae undulate to crooked; hc. subglobose-ovata, entire	*naucleae*	(1361)

3101.4330	Cols. dense, subdrustose; hyphae undulate; hc. large, ovate-piriform or subangulose	*naucleae* var. *libericae*	(1362)
3101.4220	Cols. dense, subcrustose; hyphae straight to to undulate; hc. large, subglobose-ovate, entire	*naucleae* var. *cuvierae*	(1363)
3101.4220	Cols. dense; hyphae undulate to crooked; hc. smaller, globose-piriform, entire	*glabra*	(1364)
3101.4330	Cols. dense; hyphae substraight; hc. small, globose-piriform, entire; sp. larger	*glabra* var. *major*	(1365)
3101.4230	Cols. thin, minute; hyphae crooked; hc. piriform to angulose	*vegabajensis*	(1366)
3101.4230	Cols. thin; hyphae substraight to crooked; hc. ovate-piriform, entire	*coprosmae*	(1367)
3101.4220	Cols. thin; hyphae substraight; hc. ovate-piriform or subangulose	*uncariicola*	(1368)
3101.3220	Cols. dense; hyphae substraight; hc. ovate-piriform, large, entire	*glabra* var. *coffeae*	(1369)
3101.3220	Cols. diffuse; hyphae sinuous; hc. ellipsoid or subangulose, smaller	*isertiae*	(1370)
3101.32×0	Cols. thin; hc. ovoid, entire	*penicilliformis*	(1371)
3101.3220	Cols. dense; hyphae sinuous; hc. globose to ovate, entire	*seminata*	(1372)
3101.3220	Cols. thin; hyphae undulate; hc. globose to ovate, entire	*uncariae*	(1373)
3101.3220	Cols. thin; hyphae crooked; hc. globose to oblong; sp. narrow	*angustispora*	(1374)

Meliola

3411.5221	Cols. subdense, velvety; hyphae straight; hc. piriform, entire or sublobate; ms. mostly acute; ps. acute, to 180 μ	*canthii* var. *aristata*	(1375)
3411.3121	Cols. thin, subvelvety; hyphae substraight; hc. lobate; ms. acute; ps. acute, to 90 μ	*kaduae*	(1376)
3131.4222	Cols. subdense; hyphae straight; hc. ovate-clavate, entire; ms. 2-3-dentate	*tricalysiae*	(1376a)
3131.3223	Cols. thin to subdense; hyphae straight; hc. cylindric, entire, small	*isochaeta*	(1377)
3131.3221	Cols. thin; hyphae undulate; hc. small, subglobose, entire; ms. acute or dentate	*coffeae*	(1378)
3131.3221	Cols. thin; hyphae undulate; hc. globose to ovate, small, entire; ms. dentate	*duggenae*	(1379)
31⅓3.3224	Cols. thin, subvelvety; hyphae undulate to sinuous; hc. small, subglobose, entire; ms. acute or dentate, long	*amaraliae*	(1380)
31⅓3.4222	Cols. thin, subvelvety; hyphae undulate; hc. subglobose to ovate, bent, entire; ms. acute or dentate	*duggenae* var. *major*	(1381)
31⅓3.4222	Cols. thin, subvelvety; hyphae undulate; hc. cylindric-clavate, entire; ms. obtuse or dentate	*randiae*	(1382)

31⅓2.4233 Cols. dense, subvelvety; hyphae substraight; hc. subglobose to ovate, entire; ms. obtuse, acute or obtuse-dentate ..... *sandwicensis* var. *gouldiae* (1383)

31⅓2.3221 Cols. dense, velvety; hyphae straight; hc. small, ovate, entire; ms. obtuse or obtuse-dentate ..... *kauaiensis* (1384)

31⅓1.4222 Cols. subdense, velvety; hyphae undulate to crooked; hc. ovate or angulose; ms. acute or 2-dentate ..... *straussiae* (1385)

31⅓1.3221 Cols. thin; hyphae straight or undulate; hc. small, globose-ovate, entire; ms. obtuse or obtuse-dentate ..... *anceps* (1386)

31⅓1.2221 Cols. thin, small; hyphae undulate; hc. ovate, entire; ms. obtuse or 2-furcate ..... *duggenae* var. *panamensis* (1387)

3121.5332 Cols. dense, velvety; hyphae straight to undulate; hc. ovate to subangulose, large; ms. arcuate-falcate,acute or subacute ..... *woodiana* (1388)

3121.4232 Cols. dense, velvety, crustose; hyphae sinuous to substraight; hc. subglobose to irregularly angulose; ms. arcuate to hamate, acute ..... *thalliformis* (1389)

31½1.5223 Cols. thin, subvelvety; hyphae sinuous-flexuous; hc. ovate-clavate; ms. (a) straight, obtuse, (b) around P., contorted at obtuse apex, to 150 μ long ..... *mayaguesiana* (1390)

(?)31½1.2231 "ps. numerous, to 300 μ; sp. smaller".... *mayaguesiana* var. *dominicana* (1391)

3121.3221 Cols. dense, velvety; hyphae substraight to crooked; hc. ovate-piriform, entire; ms. arcuate-hamate, obtuse ..... *cyrtochaeta* (1392)

3112.4233 Cols. dense, velvety; hyphae straight; hc. small, globose-ovate; ms. acute ..... *sandwicensis* (1393)

31⅓3.5321 Cols. dense, velvety; hyphae substraight; hc. oblong-clavulate, entire; ms. straight or flexuous, obtuse or rarely furcate..... *sandwicensis* var. *major* (1394)

3112.4223 Cols. dense; hyphae straight; hc. ovate-cylindric, entire; ms. acute ..... *randiicola* (1395)

3112.4223 Cols. dense; hyphae substraight; hc. clavate, entire; ms. acute ..... *bonarii* (1395a)

3113.5323 Cols. dense, subvelvety; hyphae straight to undulate; hc. ovate-cylindric, entire; ms. obtuse ..... *tavaoensis* (1396)

3113.4222 Cols. thin, subvelvety; hyphae substraight or undulate; hc. small, subglobose, entire; ms. acute ..... *mitragynes* (1397)

3113.4222 Cols. thin; hyphae straight or undulate; hc. ovate-cylindric, entire; ms. acute or obtuse.. *alibertiae* (1398)

3113.4234 Cols. dense, subvelvety; hyphae substraight; hc. cylindric, entire; ms. acute ..... *thwaitesiana* (1399)

3113.3222 Cols. thin; hyphae substraight or crooked; hc. ovate to subconoid, entire; ms. few, acute... *rechingeri* (1400)

3111..... Ms. obtuse:

3111.5224	Cols. thin; hyphae flexuous; hc. ovoid to oblong, entire	*malaneae*	(1401)
3111.5222	Cols. thin, subvelvety; hyphae undulate to sinuous; hc. ovoid-elliptic, entire	*mephitidiae*	(1402)
3111.4233	Cols. thin to subdense; hyphae straight or undulate; hc. ovate-oblong, entire	*littoralis*	(1403)
3111.4223	Cols. thin; hyphae substraight to undulate; hc. oblong-clavulate or lobate; ms. round P...	*longiseta*	(1404)
3111.4223	Cols. thin to dense; hyphae undulate; hc. large, ovate-clavate, entire; ms. scattered...	*africana*	(1405)
3111.4121	Cols. thin; hyphae sinuous-tortuous; hc. ovate, entire; ms. round P.	*eveae*	(1406)
3111.4124	Cols. thin, velvety; hyphae crooked; hc. ovate to slightly angulose; ms. scattered and around P.	*smallii*	(1407)
3111.3232	Cols. dense, velvety, crustose, caulicolous; hyphae crooked; hc. irregular; ms. torulose, substraight to flexuous	*deformis*	(1407a)
3111.3123	Cols. very thin; hyphae undulate; hc. ovate to subglobose, entire; ms. around P.	*imperspicua*	(1407b)

3111..... Ms. obtuse; hc. ovate, usually antrorse, entire:

M. psychotriae group:

3111.3222	Cols. thin; hyphae undulate; mh. separate; ms. torulose or twisted	*oldenlandiae*	(1408)
3111.4332	Cols. thin; hyphae substraight to undulate; mh. mixed with ch.; sp. 38—42 × 18—21 μ	*ghesquierei*	(1409)
3111.4221	Cols. dense, subvelvety; hyphae substraight to undulate; mh. separate; sp. 38—45 × 15—19 μ; ch. spreading	*tunkiaensis*	(1410)
3111.4221	Cols. dense, small; hyphae substraight; hc. large; mh. separate; sp. 36—45 × 15—20 μ	*psychotriae* var. *densa*	(1411)
3111.4222	Cols. dense; hyphae substraight to sinuous; hc. ovate-clavate or subangulose; mh. mixed with ch.; sp. 39—47 × 16—19 μ	*psychotriae* var. *moreliae*	(1412)
3111.3221	Cols. subdense, velvety; hyphae undulate; hc. ovate; mh. separate; sp. 34—40 × 14—16 μ	*psychotriae*	(1413)
3111.4221	Cols. thin; hyphae substraight; hc. large, ovate-clavate; mh. separate; sp. 35—42 × 15—18 μ	*psychotriae* var. *coffeae*	(1414)
3111.3224	Cols. thin; hyphae sinuous-flexuous; hc. ovate; mh. separate; sp. 33—38 × 13—16 μ	*psychotriae* var. *longiseta*	(1416)
3111.3221	Cols. dense, velvety; hyphae substraight; hc. globose-ovate or angulose; mh. separate; sp. 28—34 × 12—14 μ	*psychotriae* var. *gonzalagunae*	(1417)
3111.3221	Cols. dense; hyphae undulate to crooked; hc. ovate; mh. separate; sp. 37—40 × 13—16 μ; ms. undulate to subtorulose above	*mycetiae*	(1418)

3111.3221 Cols. dense; hyphae substraight to sinuous; ch. spreading; hc. ovate-clavate or angulose; mh. mostly separate; sp. 29—36×10—15 μ *kibirae* var. *randiae* (1419)

3111.3221 Cols. very thin; hyphae substraight to crooked; ch. spreading; hc. clavate-oblong; mh. separate; sp. 29—37×11—15 μ ..... *kibirae* var. *leonensis* (1420)

3111..... Ms. obtuse; hc. globose, antrorse, entire:

M. vicina group:

3111.4221 Cols. thin to subdense, velvety; hyphae substraight; hc. globose-ovate; mh. mostly mixed with ch.; sp. 36—41×13—16 μ ..... *mussaendae-arcuatae* (1421)

3111.4223 Cols. subdense, parasitic; hyphae substraight; hc. subglobose-ovate; ms. flexuous; sp. 38—42×12—13 μ ..... *uncariicola* (1421a)

3111.4223 Cols. thin to subdense; hyphae substraight to crooked; hc. oblong to subangulose; sp. 35—41×14—17 μ ..... *vicina* (1422)

3111.3221 Cols. thin; hyphae substraight to undulate; hc. globose; mh. mixed with ch.; sp. 28—35×12—14 μ ..... *amphigena* (1423)

3111.3221 Cols. thin; hyphae undulate; hc. subglobose to wide ellipsoid; mh. mixed with ch.; sp. 27—32×9—12 μ ..... *ouroupariae* (1424)

3111.3222 Cols. thin; hyphae undulate to sinuous; hc. ovate-cylindric, entire; mh. mixed with ch.; sp. 26—32×10—14 μ ..... *galopinae* (1425)

3111.2222 Cols. dense; hyphae tortuous; hc. ovoid; mh. mixed with ch.; ms. obtuse or contorted at apex; sp. 26—30×11—13 μ ..... *sabiceae* (1426)

3111.4222 Cols. dense, crustose, velvety; hyphae undulate; hc. oblong or lobate; mh. separate; sp. 37—42×17—19 μ ..... *lictorea* (1427)

3111..... Ms. obtuse to acute:

3111.4222 Cols. dense, subvelvety; hyphae substraight to undulate; hc. large ovate, entire; mh. separate ..... *feretiae* (1428)

3111.4222 Cols. thin to dense; hyphae substraight; hc. ovate, elongate; mh. separate ..... *randiae-aculeatae* (1429)

3111.3223 Cols. thin to dense; hyphae substraight to undulate; ch. antrorse or spreading; hc. ovate; mh. mostly separate..... *kibirae* var. *petrungae* (1430)

3111.3223 Cols. thin; hyphae flexuous to crooked; hc. globose-ovate or angulose; mh. separate .... *psychotriae* var. *rondeletiae* (1431)

3111..... Ms. acute or subacute:

3111.5222 Cols. dense, velvety; hyphae undulate to sinuous; hc. angulose to sublobate; sp. 40—52×12—15 μ ..... *canthii* (1432)

3111.4222 Cols. subdense, subvelvety; hyphae substraight to undulate; hc. subglobose-ovate; sp. 37—46×14—16 μ ..... *mitragynicola* (1433)

3111.4222 Cols. thin to subdense; hyphae sinuous to crooked; hc. subglobose or angulose; ms. twisted above; sp. 33—40×12—13 μ ..... *mitragynicola* var. *leonensis* (1434)

3111.5222 Cols. dense, subvelvety; hyphae substraight; hc. subglobose to angulose; ms. acute and twisted; sp. 44—53×16—18 μ ..... *mitragynicola* var. *ugandensis* (1435)

3111.3223 Cols. thin; hyphae crooked; hc. subglobose or angulose; mh. mixed with ch. ..... *kibirae* var. *mussaendae* (1436)

3111.3223 Cols. thin; hyphae crooked; hc. angulose to sublobate; mh. separate ..... *ixorae* (1433)

3111.3223 Cols. thin, minute; hyphae substraight; hc. ovate, entire; mh. separate ..... *psychotriae* var. *chiococcae* (1438)

3111.3222 Cols. dense; hyphae sinuous; hc. globose or angulose, small ..... *boninensis* (1439)

3111.4232 Cols. dense, crustose, velvety; hyphae substraight, parallel radiating; hc. ovate or angulose; mh. separate ..... *thalliformis* var. *naucleae* (1440)

3111.3222 Cols. dense; hyphae substraight to flexuous; hc. ovate-cylindric; mh. mostly separate .... *erithalidis* (1441)

3111.4232 Cols. thin to subdense; hyphae undulate; hc. clavate-oblong; mh. separate ..... *anthospermi* (1442)

3111.3223 Cols. thin; hyphae substraight; ch. spreading; hc. ovate-oblong; mh. mixed with ch..... *kibirae* var. *domingensis* (1443)

3111.3223 Cols. thin; hyphae substraight to undulate; hc. ovate or angulose; mh. mostly separate *gouldiae* (1444)

3111.3222 Cols. dense, velvety; hyphae substraight to sinuous; hc. globose-ovate; mh. mixed with ch. *mussaendae-arcuatae* var. *vangueriae* (1445)

3111.3222 Cols. thin to subdense; hyphae undulate; hc. ovate; mh. separate ..... *mitchellae* (1446)

3111.3222 Cols. thin; hyphae substraight to sinuous; hc. globose-ovate; mh. mixed with ch. ..... *amphigena* var. *tontaneae* (1447)

3111.3221 Cols. thin; hyphae straight; hc. ovate; mh. separate; ch. spreading ..... *kibirae* (1448)

3111.3222 Cols. thin; hyphae substraight; hc. ovate-subglobose; mh. mixed with ch. ..... *bayamonensis* (1449)

3111.3221 Cols. dense; hyphae crooked; hc. subglobose to lobate; mh. separate ..... *palawanensis* (1450)

3111.3231 Cols. subdense; hyphae undulate; hc. piriform to globose ..... *obtusa* (1451)

(1354) *Amazonia psychotriae* (P. Henn.) Theiss., Ann. Mycol. **11**: 499. 1913.

= *Meliola asterinoides* Wint. var. *psychotriae* P. Henn., Hedwigia **43**: 361. 1904.

Cols. epiphyllous, smooth, scattered, to 1 mm. diam. Hyphae substraight to slightly sinuous, cells mostly about 15 μ long, 6—7 μ thick, branching usually alternate, acute, loosely radiating-reticulate. Ch. alternate, antrorse, straight, 12—16 μ long; stc. cylindric, 2—7 μ long; hc. globose, entire, 8—11 μ diam. Mh. mixed with ch., mostly alternate, ampulliform to conoid, 13—18×6—9 μ. P. usually single and central, to 300 μ diam., flattened globose beneath a radiate upper covering of mycelium, about 100 μ high in centre. Sp. oblong, obtuse, 4-septate, constricted, 30—35×12—14 μ.

On *Psychotria* sp., Brazil, Ule, Herb. brasil. 3152, type (S), mixed with *Meliola ? psychotriae*; — On *P. warneckii*, Sierra Leone, Deighton 1617, 2265-a, 1855, 2280-a, 1773; Gold Coast, Hughes in IMI 39802, 39828; — On *P. recurva*, San Domingo, Ciferri, Mycofl. doming. exs. 228, Ciferri 2705; — On *P. plumierii*, San Domingo, Ciferri, Mycofl. doming. exs. 61; — On *P. grandis*, Porto Rico, Stevens 7487 (FLS); — On *P. viridiflora*, Java, Bo 13018; — On *Pavetta* sp., Uganda, Hansford 3130; — On *Palicourea barbinervis*, San Domingo, Ciferri, Mycofl. doming. exs. 201 (CUP); — On *Argostemma uniflorum*, Java, Bo 10999; — On *Lasianthus lucidus*, Java, BO 12385; — On *Rubiaceae* indet., Uganda, Hansford 1368; Congo Belge, Vanderyst 28941, 39203.

Note. The specimen, Ciferri, Mycofl. doming. exs. 228 on *Psychotria recurva*, represents the type of "*Meliola fasciculiseta*" Cif., Ann. Mycol. **36**: 209, 1938; it consists mainly of colonies of *Amazonia psychotriae* parasitised by *Helminthosporium* sp., of which the fasciculate conidiophores were described as the mycelial setae of the "*Meliola*". A few colonies of *Meliola vicina* are also present.

(1355) *Amazonia polypoda* Syd., Ann. Mycol. **15**: 145. 1917.

= *Amazonia psychotriae* (P. Henn.) Theiss. var. *straussiae* Hansf., Sydowia Beih. **1**: 90. 1957.

Cols. mostly epiphyllous, to 2 mm. diam., smooth, thin to subdense, easily secedent. Hyphae substraight to slightly undulate, branching alternate at acute angles, loosely to closely radiating-reticulate, cells mostly 15—20×5—7 μ. Ch. alternate, antrorse, straight or slightly recurved above, 15—20 μ long; stc. cuneate, 3—7 μ long; hc. oblong, entire, obtuse at apex, 10—15×6—8 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 15—22×6—9 μ. P. scattered or subaggregate in centre of colony, flattened globose beneath a radiate covering of mycelium, 350—450 μ diam., margin slightly or not fimbriate. Sp. ellipsoid to oblong, obtuse, 4-septate, rather strongly constricted, 37—43×16—18×11—12 μ.

On *Straussia mariniana*, Hawaii, Lyon, Sept. 1909 (type), Stevens 244 (type of *A. psychotriae* var. *straussiae*), 217, 252; — On *S. hawaiiensis*, Hawaii, Stevens 205, 337; — On *S.* sp., Hawaii, Stevens 442, 530, 511 p. p., 629, 624, 757, 895, 483, 609, 715, 765, 516, 475; — On *S. kaduana*, Hawaii, Stevens 335 (FLS).

(1356) *Amazonia psychotriae* (P. Henn.) Theiss. var. **major** (Gaill.) Hansf.

= *Meliola asterinoides* Wint. var. *major* Gaill., Le Genre *Meliola*, 1892, p. 58. —

= *Meliola asterinoides* Tehon, Bot. Gaz. **67**: 503. 1919.

= *Amazonia tehoni* Toro, Sci. Survey of Porto Rico and Virgin Is., 8: 2: 212. 1932.

Cols. epiphyllous, to 1 mm. diam., rarely to 4 mm., scattered, smooth. Hyphae substraight to slightly undulate, branching alternate or irregular, acute, loosely to closely radiating-reticulate, cells mostly 15—25×6—8 μ. Ch. alternate, antrorse, usually straight, 16—24 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. globose to wide piriform, entire, 12—16×9—12 μ. Mh. mixed with ch., alternate or unilateral, ampulliform, 18—23×7—8 μ. P. subaggregate in centre, flattened globose beneath a radiate covering of mycelium, to 300 μ diam., the margin irregular, centrally dehiscent by an irregular aperture. Sp. cylindric, obtuse, 4-septate, rather strongly constricted, 38—43×16—18 μ.

On *Rubiaceae* indet., Congo Francaise, Thollon 256, type (P); — On *Psychotria viridiflora*, Java, BO 13021; — On *Genipa americana*, Porto Rico, Stevens 7135 (FLS), type of *Amazonia tehoni*.

(1351) *Meliola (Irenopsis) bayamonensis* Tehon var. *guettardae* Cif., Mycopathologia **7**: 98. 1954.

Differs from type: ps. sparse, simple, obtuse, 90—250×6—9 μ; sp. smaller, 18—25×7,5—9 μ. Cols. epiphyllous, 2—10 mm. diam., rarely larger, confluent.

On *Guettarda* sp., San Domingo, Ekman 2752, type.

In view of the transfer of the species type from *Irenopsis* to *Meliola*, Ciferri's variety needs re-examination.

(1358) *Irenopsis chiococcae* Stev., Ann. Mycol. 25: 434. 1927.

= *Meliola chiococcae* Stev., Illinois Biol. Monogr. 2: 27. 1916.

Cols. epiphyllous, dense, smooth, to 1 mm. diam. Hyphae substraight to undulate, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate or very rarely (less than 1%) opposite, spreading, 15—22 μ long; stc. cylindric, 3—8 μ long; hc. subglobose, margin crenulate, angulose or sublobate, 10—16×10—19 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×6—7 μ. P. in loose central group, globose, verrucose, to 170 μ diam., surface cells rounded; ps. 8—15, erect-spreading, straight below, apex straight, bent or somewhat twisted, obtuse,

wall 1,5—2 μ thick, surface of upper part rather closely asperulate, continous, to 125×7 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 34—39×18—20 μ.

On *Chiococca alba*, Porto Rico, Stevens 7743 p. p., type (FLS); San Domingo, Ciferri, Mycofl. doming. exs. 73 p. p.

(1359) *Asteridiella palicoureae* Hansf., Sydowia Beih. 1:96. 1957.

Cols. amphigenous, to 1 mm. diam., dense, smooth. Hyphae undulate to crooked, branching opposite or irregular, densely reticulate and almost solid, cells mostly 12—20×7—10 μ. Ch. alternate, spreading, straight or bent, 20—28 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. globose to piriform, entire or angulose to sublobate, 15—20×10—18 μ. Mh. mixed with ch., alternate, ampulliform, 18—22×8—9 μ. P. few, central, verrucose, to 160 μ diam., surface cells rounded to obtusely conoid, little projecting. Sp. ellipsoid, obtuse, 4-septate, rather deeply constricted, 46—54×20—23×15—16 μ.

On *Palicourea* sp., Porto Rico, Stevens 1070-a, type (FLS), 8875.

(1360) *Asteridiella sarcocephali* (Hansf. & Deight.) Hansf., Sydowia **10**: 50. 1957.

= *Irenina sarcocephali* Hansf. & Deight., Mycol. Paper, IMI **23**: 58. 1948.

Cols. amphigenous, mostly epiphyllous, dense, 0,5—2 mm. diam. or confluent, smooth. Hyphae straight, cells mostly 12—24×8—10 μ, branching alternate or opposite at wide angles, densely reticulate and in places almost solid. Ch. alternate, more or less antrorse, usually straight, 20—30 μ long; stc. cuneate, 5—13 μ long; hc. usually shallowly 3—4-lobate, irregularly subglobose to clavate, 15—22×15—20 μ. Mh. few, mixed with ch., mostly alternate, conoid to ampulliform, 15—20×7—9 μ. P. scattered, globose, to 160 μ diam., surface cells mammillate, to 25 μ high and about 35 μ diam. at the base. Sp. oblong, to subellipsoid, obtuse, 4-septate, rather strongly constricted, 39—47×16—20 μ.

On *Sarcocephalus esculentus*, Sierra Leone, Deighton 1494 (type), 1605, 516, 1753, 1218; Gold Coast, Deighton CB 829.

(1361) *Asteridiella naucleae* (Boedijn) Hansf., Sydowia **10**: 49. 1957.

(3101.4330)

= *Irenina naucleae* Boedijn, Bull. Jard. Bot. Buitenzorg, III: **16**: 369. 1940.

Cols. amphigenous, to 1 mm. diam., dense, smooth. Hyphae undulate to crooked, cells mostly 15—20×6—8 μ, branching alternate or irregular, rarely opposite, acute, closely radiating-reticulate and almost solid. Ch. alternate or more scattered, straight or bent, more or less antrorse, 15—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. globose to ovate, entire, 10—18×7—11 μ. Mh. few, mixed with ch.,

alternate, ampulliform, 14—20×6—9 μ. P. scattered, globose, verrucose, to 210 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 40—46×17—20 μ.

On *Nauclea excelsa* var. *mollis*, Krakatau, Java, BO 14658, type; — On *N.* sp., loc. cit., BO 14657; — On *Tricalysia lanceolata*, South Africa, PRET 10871.

(1362) *Asteridiella naucleae* (Boedijn) Hansf. var. *libericae* Hansf., Sydowia **10**: 49. 1957.

Cols. amphigenous, dense, smooth, to 1,5 mm. diam. Hyphae straight or undulate, cells mostly 20—30×8—10 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 20—30 μ long; stc. cylindric or cuneate, 4—9 μ long; hc. ovate, entire or slightly rounded-angulose, rounded or slightly pointed at apex, 12—19×10—15 μ. Mh. usually separate, rather few, opposite or alternate, ampulliform to conoid, 14—25×7—9 μ. P. in central group, verrucose, to 180 μ diam.; surface cells rounded to obtusely conoid, to about 15 μ high and 30 μ diam. at the base. Sp. oblong, obtuse, 4-septate, constricted, 38—45×16—21 μ.

On *Coffea liberica*, Sierra Leone, Deighton 1944 (type) 2247, 2019, 1960; Gold Coast, Deighton CB. 882; — On *C robusta*, Gold Coast, Deighton CB 883; Uganda, Hansford 1357; — On *C. arabica*, Gold Coast, Deighton CB 982; Uganda, Small 606, Dummer 2340; — On *C. stenophylla*, Sierra Leone, Deighton 2319; — On *C.* sp., Uganda, Hansford 1835, 1836, 3032; — On *Palicourea alpina*, Porto Rico, Whetzel 3322 (CUP).

The specimens reported as *Irenina isertiae* Stev., on *Coffea*, Ivory Coast and Cameroons, by Roger (268, 269), are, from his drawings and description, to be referred to *A. naucleae* var. *libericae*.

(1363) *Asteridiella naucleae* (Boedijn) Hansf. var. **cuvierae** Hansf., var. nov.

Cols. epiphyllous, dense, smooth, rarely amphigenous. Hyphae substraight, cells mostly 13—25×9—12 μ, branching usually opposite at wide angles, very densely reticulate and almost solid. Ch. alternate, more or less closely antrorse, usually straight, 20—30 μ long; stc. cuneate, 5—10 μ long; hc. ovate, widely rounded at apex, entire, 15—22×12—15 μ. Mh. few, separate, opposite or alternate, conoid to narrowly ampulliform with short neck. P. in central group, globose, to 150 μ diam., surface cells rounded to obtuse conoid, to 20 μ high and about 35 μ diam. at the base. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 38—45×15—19 μ.

On *Cuviera acutiflora*, Sierra Leone, Deighton 2054, type.

(1364) *Asteridiella glabra* (B. & C.) Hansf., Sydowia **10**: 48. 1957.
= *Meliola glabra* B. & C., Journ. Linn. Soc. London **10**: 392. 1869.

= *Irene glabra* (B. & C.) Doidge, South African Journ. Nat. Hist. 2: 41. 1920.

= *Irenina glabra* (B. & C.) Stev., Ann. Mycol. 25: 461. 1927.

Cols. amphigenous, to 0,5 mm. diam., dense, smooth. Hyphae sinuous to crooked, cells mostly 12—18×6—8 μ, branching opposite or irregularly alternate, at acute to wide angles, closely radiating-reticulate and almost solid in centre. Ch. alternate, antrorse, usually straight, 15—23 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. globose to broadly piriform, entire, broadly rounded at apex, 10—16× 9—13 μ. Mh. few, mixed with ch., or sometimes on separate hyphae, opposite or alternate, ampulliform, to conoid, 13—16×7—8 μ. P. 1—2 in centre of colony, globose, verrucose, to 170 μ diam., surface cells obtusely rounded, conoid or sub-mammillate, to 15 μ high. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—41×13—15× 11—13 μ.

On *Rubiaceae* indet., Cuba, Wright 413, type (K), 449 (K, F); Congo Belge, Vanderyst 14082; — On *Palicourea* sp., Porto Rico, Stevens 8278 (FLS); — On *Psychotria bertiana*, Porto Rico, Stevens 8646, Whetzel 3326.

(1365) *Asteridiella glabra* (B. & C.) Hansf., var. **major** Hansf., var. n.

Cols. epiphyllous, dense, smooth, to 3 mm. diam. Hyphae substraight, cells mostly 25—30×6—8 μ, branching usually opposite, at acute to wide angles, closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 13—25 μ long; stc. cuneate to cylindric, 3—11 μ long; hc. globose to piriform with widely rounded apex, entire, 10—17×9—13 μ. Mh. separate or more commonly mixed with ch., opposite or alternate, ampulliform, 12—20×7—9 μ. P. scattered or in a loose central group, globose, rough, to 210 μ diam., surface cells obtusely conoid to rounded, to 15 μ high and about 30 μ diam. at the base. Sp. broadly subellipsoid, obtuse, 4-septate, constricted, 38—47×18—21 μ (average 41×20 μ).

On *Canthium* sp., South Africa, PRET 1780, type; — On *Rubiaceae* indet., South Africa, PRET 12367.

(1366) *Asteridiella vegabajensis* Hansf., Sydowia Beih. 1: 98. 1957.

Cols. hypophyllous, thin to 1 mm. diam. or confluent, smooth. Hyphae crooked, branching irregular, acute, loosely interwoven-reticulate, cells mostly 25—30×5—7 μ. Ch. alternate, antrorse or spreading, usually bent, 15—25 μ long; stc. cuneate, 3—11 μ long; hc. piriform to irregularly rounded-angulose, often bent, 12—15×10—16 μ. Mh. separate, opposite or alternate, ampulliform, 18—23×6—8 μ, neck elongate. P. in close central group, verrucose, to 260 μ diam., surface cells obtusely conoid to mammillate, to 25 μ high. Sp. oblong, obtuse, 4-septate, constricted, 37—43×13—15 μ.

On *Psychotria* sp., Porto Rico, Stevens 516, type (FLS).

(1367) *Asteridiella coprosmae* Hansf., Sydowia Beih. **1**: 95. 1957.

Cols. mostly hypophyllous, to 2 mm. diam. or confluent, thin, smooth. Hyphae substraight to undulate or crooked, branching alternate or irregular, acute, loosely interwoven-reticulate, cells mostly 30—40×6—8 μ. Ch. alternate, antrorse, straight or slightly bent, 20—29 μ long; stc. cuneate, 5—10 μ long; hc. ovate to piriform, entire, 15—20×9—14 μ. Mh. separate on hyphae with cells about 20 μ long, opposite or alternate, ampulliform, 16—20×8—9 μ. P. loosely scattered, rough, to 240 μ diam., surface cells conoid, to 24 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—47×17—20×14 μ.

On *Coprosma* sp., Hawaii, Stevens 456 (type), 444, 437, 523, 458, (FLS).

(1368) *Asteridiella uncariicola* Hansf., Sydowia **11**: 49. 1958.

Cols. epiphyllous, rather thin, to 3 mm. diam., smooth. Hyphae substraight, branching alternate or irregular at acute angles, loosely radiating-reticulate, denser in centre, cells mostly 30—40×7—9 μ. Ch. alternate or more scattered, subantrorse, substraight, 26—40 μ long; stc. cuneate, 6—15 μ long; hc. ovate to piriform, entire or slightly rounded-angulose, 18—28×14—19 μ. Mh. separate, opposite or alternate, ampulliform, 12—15×7—9 μ. P. scattered, verrucose, to 200 μ diam.; surface cells conoid to mammillate, to 22 μ high. Sp. oblong, obtuse, 4-septate, constricted, 35—43×15—17×13 μ.

On *Uncaria perrottetii*, Philippines, Stevens 424, type (FLS).

(1369) *Asteridiella glabra* (B. & C.) Hansf., var. *coffeae* (Roger) Hansf., comb. n.

= *Irenina coffeae* Roger, Bull. Soc. Myc. France **50**: 320. 1934.

= *Meliola rogeri* E. Castellani, cited by Roger, Phytopath. des Pays Chauds, **2**: 1644. 1953.

Cols. amphigenous, 5—15 mm. diam., often widely confluent over the leaf. Hyphae brown, cells 20—30×9 μ. Ch. alternate, antrorse, straight or slightly bent, 25—37 μ long; stc. cuneate to cylindric, 10—18 μ long; hc. ovate to piriform, rounded to somewhat pointed at apex, entire, 14—24×10—14 μ. Mh. not seen. P. averaging 100 μ diam. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 35—40×18—20 μ.

On *Coffea* sp., Cameroun, Roger.

The drawing below is a copy of that given by Roger, l. c. 1953, p. 1645; no specimens have been available to the present author.

(1370) *Asteridiella glabra* (B. & C.) Hansf., var. **isertiae** (Stev.) Hansf. comb. n.

= *Irenina isertiae* Stev., Ann. Mycol. **25**: 460. 1927.

Cols. amphigenous, thin, to 3 mm. diam., smooth. Hyphae undulate to substraight, cells mostly 12—20×6—7 μ, branching opposite,

acute to wide, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 15—20 μ long; stc. cuneate, 3—5 μ long; hc. ovate, broadly rounded at apex, entire, straight or slightly bent, 12—17 × 7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—21 × 6—7 μ. P. scattered, verrucose, to 150 μ diam., surface cells rounded to obtusely conoid, to 15 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—37 × 13—15 × 11—12 μ.

On *Isertia haenkiana*, Panama, Stevens 220, 552, 764, 982, 1013, 1112, 1149, 1354 (FLS); — On *Psychotria* sp., Panama, Stevens 172; — On Rubiaceae indet., Panama, Stevens 1008, 1092.

The colonies are much thinner and larger than in the type.

(1371) *Asteridiella penicilliformis* (Gaill.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola penicilliformis* Gaill., Le Genre *Meliola*, 1892, p. 57.

= *Irenina penicilliformis* (Gaill.) Stev., Ann. Mycol., **25**: 455. 1927.

Cols. thin, adherent, to 3 mm. diam. Hyphae ramose, 8—9 μ thick. Ch. alternate, 20—22 μ long; stc. short; hc. ovoid, entire. Mh. few, mixed with ch., ampulliform. P. scattered, globose, granulose. Sp. ellipsoid, obtuse, 4-septate, constricted, 37—40 × 15—18 μ.

On *Psychotria* sp., Brazil, Poeppig, type.

Gaillard also included in his original description the conidia and conidiophores of ? *Arthrobotryum* sp. The only specimen of Poeppig in Herb. Paris was labelled "*Meliola penicillata* Lev.": it may possibly be the type of the present species, in which case *Asteridiella penicilliformis* becomes a synonym of *A. seminata* (see below).

(1372) *Asteridiella seminata* (B. & C.) Hansf., Sydowia 10: 50. 1957.

= *Meliola seminata*, B. & C., Journ. Linn. Soc. London **10**: 000. 1869.

= *Irenina seminata* (B. & C.) Stev., Ann. Mycol. 25: 468. 1927.

= *Meliola glabra* B. & C. var. *psychotriae* Stev., Illinois Biol. Monogr. 2: 14. 1916.

Cols. amphigenous, smooth, dense, 0,5 to 3 mm. diam., sometimes confluent (in the type specimen numerous and separate). Hyphae undulate to sinuous, cells mostly 15—20 × 6—8 μ, branching opposite, alternate or irregular, acute, closely radiating-reticulate and almost solid in places. Ch. alternate, more or less closely antrorse, straight or slightly bent, 15—28 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. globose to ovate, entire, broadly rounded to slightly pointed at apex, 12—20 × 8—12 μ. Mh. mixed with ch., few, alternate, ampulliform, 14—20 × 6—8 μ. P. single or in a central group, globose, verrucose, to 170 μ diam.; surface cells rounded to conoid, obtuse, projecting up to 20 μ. Sp. cylindric, obtuse, 4-septate, constricted, 31—37 × 13—15 × 11—12 μ.

On *Psychotria* sp., Cuba, Wright 775 (type) (K); Brazil, Poeppig (P); — On *Palicourea* sp., Cuba, Wright 885 (K); — On *Palicourea domingensis*, Porto Rico, Stevens 7649; San Domingo, Ciferri (Ekman 14892) (S); — On *Psychotria berteriana*, San Domingo, Ciferri, Mycofl. doming. exs. 47-bis (K).

The Poeppig specimen from Brazil quoted above was labelled as *Meliola penicillata* Lev. (Ann. Sci. Nat. Bot. Ser. III: **5**: 266, 1846), but is not the type; it is possible that it represents the type of *Meliola penicilliformis* Gaill., Le Genre *Meliola*, 1892, p. 57, = *Irenina penicilliformis* (Gaill.) Stev., Ann. Mycol. **25**: 455. 1927, and in that case this name would be reduced to synonomy with *Ast. seminata*. The present author is doubtful as to whether the differences between *Asteridiella seminata* and *A. glabra* are sufficient to warrant their retention as separate species, or whether the former would be best reduced to a variety of the latter. Only a large series of new collections from the West Indies can resolve this matter.

(1373) *Asteridiella uncariae* (Rehm) Hansf., Sydowia **10**: 51. 1957.
= *Meliola uncariae* Rehm, Leafl. Philipp. Bot. **6**: 2192. 1914.
= *Irenina uncariae* (Rehm) Stev., Ann. Mycol. **25**: 451. 1927.

Cols. epiphyllous, scattered, thin ,2—3 mm. diam. Hyphae undulate, branching alternate or irregular, acute, not opposite, cells mostly 20—30×6—8 μ, rather loosely radiating-reticulate. Ch. alternate or about 4% opposite, spreading or antrorse, straight or slightly bent, 15—24 μ long; stc. cuneate, 3—7 μ long; hc. globose to ovate or widely piriform, broadly rounded at apex, entire, 10—16×10—13 μ, often in groups separated by cells devoid of hyphopodia. Mh. separate, opposite or alternate, ampulliform, 12—17×6—9 μ. P. 2—5 in loose central group, verrucose, to 170 μ diam. Sp. ellipsoid, straight or slightly bent, obtuse, 4-septate, slightly constricted, 29—35×12—14× 11—12 μ.

On *Uncaria perrottetii*, Philippines, Baker 1280, type, PBS 21039 (K), 34301 (FLS), Stevens 75, 1585.

The distribution of the ch. in irregular zones of the colony is very characteristic.

(1374) *Asteridiella angustispora* (Stev. & Rold.) Hansf., Sydowia **10**: 46. 1957.
= *Irenina angustispora* Stev. & Rold., Philipp. Journ. Sci., **56**: 53. 1935.

Cols. hypophyllous, thin, to 3 mm. diam. Hyphae crooked or undulate, cells mostly 20—30×4—5 μ, branching opposite, wide, loosely reticulate, Ch. alternate, subantrorse, straight or slightly bent, 13—18 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to ovate or sometimes slightly angulose, 10—14×8—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—23×6—8 μ. P. loosely scattered, slightly verrucose, to 160 μ diam., surface cells

rounded, obtusely conoid to slightly mammillate, about 10 μ high. Sp. oblong, obtuse, 4-septate, constricted, 28—33×9—11 μ.

On *Neonauclea* sp., Philippines, Stevens 1633, (FLS, CUP); Stevens 1620 (type) (FLS); — On ? *Nauclea* sp., Borneo, Clemens s. n. (BM).

Stevens & Roldan, loc. cit. described var. *laevis*, based on the specimen Stevens 1633, differing from the type in smoother perithecia; the present author considers this a very unreliable character in most species of the Meliolineae, and hence that the variety is not worth separate retention.

(1375) *Meliola canthii* Hansf. var. *aristata* Hansf., Proc. Linn. Soc. London, **157**: 22. 1945.

= *Meliola woodiana* Sacc. var. *aristata* Hansf., Journ. Linn. Soc. London **51**: 284. 1937.

Cols. epiphyllous or less commonly amphigenous, subdense, subvelvety to 5 mm. diam. Hyphae straight or slightly undulate, cells mostly 25—30 μ long; branching opposite, acute, closely radiating-reticulate. Ch. alternate, straight or slightly bent, 20—35 μ long; more or less closely antrorse; stc. cylindric to cuneate, 7—15 μ long; hc. clavate or shallowly 2—3-lobate, 12—20×10—16 μ. Mh. mixed with ch. alternate, or opposite, few, ampulliform, 15—25×8—10 μ. Ms. scattered, straight, simple, acute or rarely obtuse, to 300×8—10 μ. P. scattered, verrucose, to 190 μ diam.; ps. 0—6, erect-spreading, straight, simple, acute, to 180×6 μ, septate, somewhat lighter in colour than ms. Sp. oblong, obtuse, 4-septate, slightly constricted, 43—52×14—16 μ.

On *Canthium vulgare*, Uganda, Hansford 1912 (type), 3387.

(1376) *Meliola kaduae* Stev., Bull. Bishop Mus. **19**: 30. 1925.

Cols. amphigenous, thin, more or less effuse, thinly velvety. Hyphae substraight to flexuous, cells mostly 25—40×6 μ, branching usually opposite and acute, loosely reticulate. Ch. alternate, straight or irregularly bent, spreading or antrorse, 25—35 μ long; stc. cylindric or cuneate, 5—10 μ long; hc. very irregular with narrow, elongate lobes, which are often acute, versiform, often irregularly bent, 15—33× 10—28 μ. Mh. not seen. Ms. scattered, simple, acute, more or less flexuous, not uncinate, mostly about 250×7—8 μ (to 650 μ long, teste Stevens), attenuate upwards. P. loosely scattered, verrucose, to 170 μ diam., each with loose group of setae arising from base and sides, 50—90×6—7 μ, acute, simple, flexuous. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—36×9—10 μ.

On *Kadua* sp., Hawaii, Stevens 601 (type); — On *Gouldia* sp., Hawaii, Stevens 597 p. p.; — On *Straussia* spp., Hawaii, Stevens 1049 p. p., 512, 617 p. p.

(1376-a) *Meliola tricalysiae* Deight., Sydowia **11**: 114. 1957.

Cols. amphigenous, mostly epiphyllous, rather dense, loosely

velvety, to 2 mm. diam. Hyphae straight or substraight, branching opposite at wide angles, closely reticulate, cells mostly 12—20× 6—10 μ. Ch. alternate, rarely opposite, antrorse to spreading, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. oblong, wide ovate or clavate, obtuse, straight or slightly bent, entire, 10—16×10—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—24×7—10 μ. Ms. scattered and grouped around P., straight or slightly flexuous, to 425×9—10 μ, 2—3-dentate to 10 μ, or rarely bifurcate to 20 μ with dentate branches. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—44×15—16,5×13—14 μ.

On *Tricalysia okelensis*, Sierra Leone, Deighton 2477 (IMI 5390, type).

Hypophyllous colonies have sinuous hyphae with the ch. rather more bent.

(1377) *Meliola isochaeta* Cif., Ann. Mycol. **36**: 211. 1938.

Cols. diffuse, often confluent, 2—5 mm. diam., thin to subdense. Hyphae straight, cells mostly 15—25×6—8 μ, branching opposite, subrectangular, loosely to closely reticulate. Ch. alternate or very rarely opposite, straight or slightly bent, 13—20 μ long; usually slightly antrorse; stc. cylindric, 3—6 μ long; hc. oblong with rounded apex, entire, 10—14×6—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—22×6—7 μ. Ms. scattered over mycelium and grouped around P., straight, to 510×6—9 μ, apex variously dentate to 15 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, rather strongly constricted, 34—39×15—17 μ.

On *Rondeletia brachycarpa*, San Domingo, Ciferri, Mycofl. doming. exs. 252 (type), Ekman 3212 (S).

(1378) *Meliola coffeae* Hansf., Journ. Linn. Soc. London **51**: 273. 1937.

Cols. thin, hypophyllous or amphigenous, to 5 mm. diam. Hyphae substraight to sinuous or crooked, cells mostly 20—30 μ long, branching opposite or irregular, at wide angles, loosely to closely reticulate. Ch. alternate or very rarely opposite, more or less antrorse, straight or bent, 12—19 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose, entire, widely rounded at apex, 8—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—23×7—9 μ. Ms. scattered and grouped around P., straight, to 300×7—9 μ, apex 2—4-dentate to 18 μ, teeth acute. P. scattered, globose, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 30—40×11—13 μ.

On *Coffea robusta*, Uganda, Hansford 1835 (type), 2037, 3032; — On *Rutidea parviflora*, Sierra Leone, Deighton 1854 p. p.; — On *R. glabra*, Sierra Leone, Deighton 1964 p. p., with spores 30—35× 11—14 μ; — On *R. smithii*, Uganda, Hansford 3376, 3558, with

spores 35—42×12—15 μ; — On *Coffea liberica*, Sierra Leone, Deighton 2055, 2171; — On *Tricalysia* sp., Uganda, Hansford 3087.

(1379) *Meliola duggenae* Stev., Ann. Mycol. **26**: 198. 1928.

Cols. amphigenous, mostly epiphyllous, to 10 mm. diam., thin. Hyphae undulate to sinuous, cells mostly 15—28×5—6 μ, branching opposite, acute, loosely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 13—19 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. subglobose to ovate, entire or rarely rounded-angulose, 9—14×7—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—7 μ. Ms. scattered, numerous, to 300×5—7 μ, apex 2—3-frucate to 25 μ, branches obtuse, mostly 5—10 μ long. P. scattered, slightly verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 25—31×11—12 μ.

On *Duggena* sp. (= *Gonzalagunia*), Panama, Stevens 1159, type (FLS, F).

(1380) *Meliola amaraliae* Hansf. & Deight., Mycol. Paper, IMI **23**: 63. 1948.

Cols. hypophyllous, thin, to 10 mm. diam. or confluent, thinly velvety. Hyphae undulate to sinuous, cells mostly 20—30×6 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate or to 2% opposite, spreading, straight or slightly bent, 12—23 μ long; stc. 4—11 μ long, cylindric; hc. subglobose, entire, 8—13×7—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 12—20×7—8 μ, neck usually elongate. Ms. scattered and grouped around P., those on mycelium to 1800 μ long, those around P. usually not above 350 μ long, 7 μ thick below, very slightly attenuate to the acute or 2—3-dentate apex, sometimes subtorulose below the apex, straight. P. loosely scattered, almost smooth, to 130 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 28—33×11—12×9 μ.

On *Amaralia heinsioides*, Sierra Leone, Deighton 1334 (type), 2372; — On *A. sherbournia*, Sierra Leone, Deighton 373.

(1381) *Meliola duggenae* Stev. var. *major* Hansf., Journ. Linn. Soc. London **51**: 274. 1937.

Cols. amphigenous, mostly hypophyllous, to 6 mm. diam., thin, subvelvety, often confluent. Hyphae substraight to sinuous, cells mostly 25—35 μ long, branching usually opposite at wide angles, loosely reticulate. Ch. alternate or to 2% opposite, usually more or less bent, spreading or reflexed, 15—22 μ long; stc. cylindric, 5—7 μ long; hc. ovate to subglobose, entire, usually bent, rounded, 40—15× 7—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform 14—19×7—9 μ, neck usually bent and elongate. Ms. thinly scattered and grouped around P., straight, rarely simple and acute, usually 2—3-dentate to 20 μ, up to 320×7—8 μ. P. scattered, verrucose, to

150 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 36—42×12—15 μ.

On *Morelia senegalensis*, Uganda, Hansford 1970 (type), 3049.

(1382) *Meliola randiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 60. 1948.

Cols. hypophyllous, thin, slightly velvety, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 20—25×5—6 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. altenate or to about 2% opposite, spreading or subantrorse, usually straight or slightly bent, 15—20 μ long; stc. cylindric or cuneate, 3—8 μ long; hc. cylindric to slightly clavate, rounded at apex, entire, 11—14×6—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—24×6—7 μ. Ms. numerous, scattered and grouped around P., straight, obtuse, acute or more usually 2—3-dentate to 5 μ, up to 320×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 36—42× 15—18 μ.

On *Aidia genipaeflora*, Sierra Leone, Deighton 1989, type; — On *Aidia* sp., Congo Belge, Vanderyst s. n. (BRUX);

(1383) *Meliola sandwicensis* Ell. & Everh., var. *gouldiae* Hansf., Sydowia **9**: 75. 1955.

Cols. amphigenous, dense, to 4 mm. diam. or confluent, slightly velvety. Hyphae substraight, cells mostly 15—30×6—8 μ, branching opposite, acute, densely reticulate. Ch. opposite, more or less antrorse, 14—18 μ long; usually straight; stc. cuneate, 3—6 μ long; hc. subglobose to wide ovate, entire, 9—13×7—10 μ. Mh. rather few, in centre of younger colonies, mixed with ch., alternate, opposite or ternate, ampulliform, 12—18×7—9 μ. Ms. closely scattered and grouped around P., straight, mostly 200—250 μ long, obtuse, clavate or shortly obtuse-furcate to 20 μ at apex, rarely up to 700 μ long and then simple and attenuate to subacute apex, all 7—9 μ thick below. P. scattered, verrucose, to 210 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 44—47×17—19×12—14 μ.

On *Gouldia coriacea*, Hawaii, Shear in USDA 71011, type (S); — On *G. lanceolata*, Hawaii, Stevens 1049 p. p., 612, Caum 144; — On *G. terminalis*, Hawaii, Stevens 621. — On *G.* sp., Hawaii, Shear 642, Stevens 454, 482, 720, 1060 p. p., Swezey in *Stevens* 1162; — On *Kadua knudsenii*, Hawaii, Stevens 525; — On *K.* sp.,Hawaii, Stevens 708.

(1384) *Meliola kauaiensis* Stev., Bull. Bishop Mus. **19**: 39. 1925.

Cols. amphigenous, mostly epiphyllous, very dense, to 4 mm. diam., velvety. Hyphae substraight, cells mostly 15—20×6 μ, branching opposite at wide angles, very densely reticulate and subsolid. Ch. opposite, more or less antrorse, straight or bent, 12—16 μ long; stc. cuneate to cylindric, 2—4 μ long; hc. subglobose to ovate, entire,

7—11×6—9 μ. Mh. not seen. Ms. densely scattered, straight or slightly and irregularly flexuous, to 280×9—10 μ, apex rarely simple and obtuse, usually 2—3-dentate or shortly 2-furcate to 30 μ, the branches then dentate, apices usually obtuse. P. closely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—40×13—15 μ.

On *Kadua knudsenii*, Hawaii, Stevens 436; — On *K.* sp., Hawaii, Stevens 531, type, 437.

(1385) *Meliola straussiae* Hansf., Sydowia Beih. **1**: 117. 1957.

Cols. mostly hypophyllous, to 2 mm. diam., subdense, velvety. Hyphae undulate to crooked, branching usually opposite at wide angles, becoming closely interwoven-reticulate, cells mostly 20—25× 5—6 μ. Ch. alternate, subantrorse, straight or bent, 15—25 μ long; stc. cuneate, 4—9 μ long; hc. ovate, piriform or irregularly rounded-angulose, rarely sublobate, 12—18×7—10 μ. Mh. few, mixed with ch., alternate, conoid to ampulliform, 15—19×6—8 μ. Ms. numerous, scattered and grouped around P., straight or flexuous, simple and acute, or less commonly 2-dentate to 15 μ, up to 330×9—11 μ. P. scattered, globose, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—41×11—13 μ.

On *Straussia* sp., Hawaii, Stevens 483 p. p., type (FLS).

(1386) *Meliola anceps* Syd., Ann. Mycol. **14**: 76. 1916.
= *Meliola mussaendae* Syd., l. c., **15**: 190. 1917.
= *Meliola makilingiana* Syd., l. c., **15**: 188. 1917.

Cols. hypophyllous or amphigenous, thin, to 10 mm. diam. or confluent, sometimes thinly velvety. Hyphae substraight to undulate, cells mostly 25—40×6—7 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, somewhat antrorse, usually straight, 13—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose to ovate, widely rounded at apex, entire, 9—14×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—24×7—9 μ. Ms. thinly scattered and grouped around P., straight or slightly bent, to 250×6—9 μ, simple and obtuse, often slightly inflated at the apex, or 2—3-furcate to 35 μ, with obtuse apices. P. scattered, slightly verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 27—34×11—14 μ.

On *Uncaria guyanensis*, Brazil, Ule, 3441 (S, type); — On *Mussaenda philippica*, Philippines, PBS 24057 (type of *M. mussaendae*), Baker 2972, Stevens 1634, 501; — On *Psychotria* sp., Philippines, Baker 2146 (type of *M. makilingiana*), Baker, Fung. malay. 549, 550; — On *Posoquieria latifolia*, Costa Rica, Stevens 793, 838; — On *Sapanea glomerata*, Venezuela, Barrus 3820 (CUP).

(1387) *Meliola duggenae* Stev. var. *panamensis* Stev., Ann. Mycol. **26**: 198. 1928.

Cols. mostly epiphyllous, small, thin, to 1 mm. diam. Hyphae

undulate, branching usually opposite, acute or wide, loosely reticulate, cells mostly 25—30×6 μ. Ch. alternate, antrorse, straight or slightly bent, 15—22 μ long; stc. cuneate to cylindric, 2—7 μ long; hc. ovate, entire, 11—16×8—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—20×7 μ. Ms. scattered thinly and grouped around P., substraight, simple, obtuse, to 250×7 μ, rarely furcate to 8 μ with obtuse tips (mostly immature). P. in loose central group, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 27—30×11—13 μ.

On *Duggena (Gonzalagunia) panamensis*, Panama, Stevens 1314, type (FLS, F), 701.

(1388) *Meliola woodiana* Sacc., Hedwigia **38**: 132. 1899.
= *Meliola falcata* Syd., Ann. Mycol. **10**: 37. 1912.

Cols. amphigenous, mostly epiphyllous, very dense, velvety, 2—4 mm. diam. or often confluent. Hyphae straight or undulate, cells mostly 18—30×6—10 μ, branching usually opposite, acute, densely reticulate. Ch. alternate, straight or bent, more or less closely antrorse, 22—30 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. ovate, entire or very slightly rounded-angulose, broadly rounded or slightly attenuate at apex, 17—20×9—13 μ. Mh. separate, opposite or mostly alternate, ampulliform, 11—20×7—9 μ. Ms. numerous, simple, arcuate to falcate, simple, apex acute to obtuse, to 400×7—10 μ, attenuate upwards. P. scattered, verrucose, to 230 μ diam. Sp. oblong, to subellipsoid, obtuse, 4-septate, constricted, 38—54×16—21 μ.

On *Plectronia ventosa*, South Africa, Medley Wood 6467, type, PRET 1577 (type of *M. falcata*), 1591, 6952, 9005, 9017, 9128, 10881, 10920, 11359, 11383, 11385, 11882, 11890, 12290, 17110, 17219, 17257; — On *P. mundtiana*, South Africa, PRET 11883; — On *P. spinosa*, South Africa, PRET 9030, 10936, 12189, 12390, 17119; — On *P. ciliata*, South Africa, PRET 10936; — On *Morinda jasminoides*, New South Wales, Fraser 52; — On *Rubiaceae indet.*, Brazil, Spencer-Moore 537, 648 (BM);

(1389) *Meliola thalliformis* Deight., Sydowia 11: 113. 1957.

Cols. hypophyllous, mostly on the main leaf-veins, rarely also epiphyllous, crustose, velvety, very densely thalliform with distinct margin, strongly parasitic and causing reddish-brown leafspots, visible on the opposite surface. Hyphae in centre of young colonies sinuous to crooked, in older colonies densely radiating-parallel and substraight, branching alternate or opposite, acute, forming a solid radiate plate, cells mostly 10—20×6—9 μ. Ch. alternate or more scattered, antrorse, straight or bent, 16—34 μ long; stc. cylindric to cuneate, 3—14 μ long; hc. subglobose to ovate, entire or sometimes angulose, 11—20×10—14 μ. Mh. separate, on loosely radiating, crooked hyphae above the mycelial plate, alternate, ampulliform,

12—20×6—8 μ. Ms. very numerous, scattered and ground P., simple, acute, widely arcuate to sometimes uncinate in upper half, rarely substraight, to 350×8—9 μ. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—48×14—16×12—14 μ.

On *Mitragyna stipulosa*, Sierra Leone, Deighton 1328 p. p., type, (IMI 9990-b); 2250.

(1390) *Meliola mayaguesiana* Stev., Illinois Biol. Monogr. **2**: 32. 1916.

Cols. amphigenous, mostly hypophyllous, 2—8 mm. diam., thin, subvelvety. Hyphae sinuous to flexuous, cells mostly 30—40×7 μ, branching mostly opposite at acute angles, loosely reticulate-interwoven. Ch. alternate, spreading, straight or bent, 16—25 μ long; stc. cylindric or cuneate, 3—11 μ long; hc. entire, ovate to clavate, 9—16×8—11 μ. Mh. mixed with ch., mostly alternate, ampulliform, 20—30×6—7 μ, neck elongate. Ms. numerous, biform: (a) scattered over mycelium, straight or slightly bent, simple, obtuse, to 900×8—9 μ, (b) in groups of 8—12 around P., arising from basal disc, not from perithecial wall, erect-spreading, variously curved and spirally contorted towards the obtuse apex, sometimes in a close knot, up to 150×7—8 μ, 2—5-septate. Sp. oblong with attenuate-rounded ends, slightly bent, 4-septate, constricted, 44—51×8—10 μ.

On *Palicourea* sp., Porto Rico, Stevens 7157 (type); Costa Rica, Stevens 877; British Guiana, Stevens 570 (FLS); Trinidad, Thaxter 7501 (F); — On *P. guianensis*, British Guiana, Stevens 812 (FLS); — On *Palicourea riparia*, Porto Rico, Stevens 7019, 7403; Whetzel 2551, 2553; — On *P. domingensis*, Porto Rico, Stevens 9320 p. p.; — On *P. crocea*, Porto Rico, Stevens 7196, 8162, 8138, Whetzel 589, 596; — On *Psychotria* sp., Ecuador, Stevens 66; Costa Rica, Stevens 550; Porto Rico, Stevens 979, 1131; — On *Rubiaceae* indet., Panama, Stevens 1093.

It is often a matter of great difficulty to decide whether the (b) setae are mycelial or truly perithecial in origin; they were described originally as perithecial, making the species formula 3411.5223.

(1391) *Meliola mayaguesiana* Stev. var. *dominicana* Cif., Mycopathologia **7**: 154. 1954.

Differs from type: Cols. 1—3 mm. diam., scattered. Ps. very numerous, up to 300 μ long; P. larger, to 300 μ diam.; Sp. smaller, 25—30 μ long.

On *Psychotria revoluta*, San Domingo, Ciferri 2712, type, not seen by present author.

(1392) *Meliola cyrtochaeta* Syd., Ann. Mycol. **26**: 85. 1928.

Cols. hypophyllous, velvety, to 20 mm. diam. Hyphae substraight to crooked, branching opposite or irregular at wide angles, closely interwoven-reticulate, cells mostly 30—40×6—8 μ. Ch. alternate,

spreading, straight or bent, 16—22 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate to piriform, entire, straight or bent, apex rounded, 10—17×10—20 μ. Mh. separate, alternate, ampulliform, 15—22×6—8 μ. Ms. numerous, scattered, irregularly arcuate to hamate above, simple, obtuse, to 300×7—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—37×11—13 μ.

On *Uncaria longiflora*, Borneo, Elmer 20374, type (S, BO).

(1393) *Meliola sandwicensis* Ell. & Everh., Bull. Torrey Bot. Club, **22**: 434. 1895.

Cols. amphigenous, mostly hypophyllous, dense, velvety, to 4 mm. diam. Hyphae substraight, cells mostly 10—20×6—7 μ, branching opposite at wide angles, densely reticulate and in places nearly solid. Ch. opposite, spreading or antrorse, often closely crowded, straight or bent, 11—15 μ long; hc. globose to ovoid, entire, widely rounded at apex, straight or slightly bent, 7—11×6—10 μ. Mh. mixed with ch., alternate or rarely opposite, ampulliform, 12—17×6—7 μ. Ms. numerous, closely scattered and grouped around P., straight, simple, acute, to 700×8—10 μ. P. scattered, verrucose, to 260 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—46×17—19×12—14 μ.

On *Rubiaceae* indet., Hawaii, Heller 2369, type (S); — On *Gouldia lanceolata*, Hawaii, Stevens 1049 p. p.; — On *G. coriacea*, Hawaii, Stevens 537, 604; — On *G.* sp., Hawaii, Stevens 601 p. p., 597 p. p., 709; — On *Kadua* sp., Hawaii, Forbes in Stevens 311.

(1394) *Meliola sandwicensis* Ell. & Everh., var. **major** Hansf., var. n.

Cols. amphigenous, dense. velvety, to 3 mm. diam. Hyphae substraight, branching opposite, acute, densely reticulate and becoming nearly solid, cells mostly 12—20 μ long. Ch. alternate or almost entirely opposite, antrorse, straight or slightly bent, 19—23 μ long; stc. cylindric, 2—6 μ long; hc. oblong to clavulate, entire, 15—20×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—21×7—9 μ. Ms. few to numerous, straight or slightly flexuous, to 280×9—11 μ, simple and obtuse or rarely furcate to 20 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—58×20—24 μ.

On *Gouldia coriacea*, Hawaii, Stevens 446 (type) (FLS); — On *G. macrocarpa*, Hawaii, Stevens 459, 1050, 626; — On *G.* sp., Hawaii Stevens 1085, 432, 1078, 495, 1060 p. p.

(1395) *Meliola randiicola* Hansf., Sydowia **10**: 87. 1957.

Cols. amphigenous, on upper surface dense and to 2 mm. diam., on lower surface looser, to 5 mm. diam. or confluent. Hyphae substraight to sinuous, or on lower surface somewhat crooked, cells mostly 20—25×7—8 μ, branching usually opposite at wide angles,

closely reticulate, Ch. opposite, somewhat antrorse, straight or slightly bent, 13—18 μ long; stc. cylindric or cuneate, 2—5 μ long; hc. ovate to cylindric, entire, rounded at apex, 9—14×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×7—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 650×7—9 μ. P. in central groups on upper surface, more scattered below, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, rather strongly constricted, 42—48×17—19 μ.

On *Randia patula*, Java, BO 14049, type.

(1395-a) *Meliola bonarii* Batista & Nascimento, (in press).

Cols. epiphyllous or rarely also hypophyllous, dense, to 5 mm. diam. Hyphae substraight, branching opposite, wide, closely reticulate, cells 13—40×7—8,5 μ. Ch. opposite, antrorse, slightly bent, 17—25 μ long; stc. cylindric; hc. clavate, entire, 11—12,5 μ wide. Mh. opposite, ampulliform, 12—24×7—8,5 μ. Ms. scattered, straight, simple, acute, to 610×7,5—10 μ. P. scattered, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—46×15—18,5 μ.

On *Adina* sp., Philippines, Merrill in Herb. Univ. California 211351.

(1396) *Meliola tawaoensis* Hansf., Sydowia **10**: 92. 1957.

Cols. hypophyllous, to 4 mm. diam. or confluent, dense, subvelvety. Haphae straight to undulate, branching opposite at wide angles, closely reticulate, cells mostly 15—25×7—9 μ. Ch. opposite or alternate in varying proportions, antrorse or spreading, straight or slightly bent, 17—23 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. wide ovate to cylindric, entire, 12—17×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 22—28×8—9 μ, neck elongate. Ms. scattered and grouped around P., straight, simple, obtuse, to 600×9—11 μ. gradually attenuate upwards. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—54×17—21 μ.

On *Rubiaceae* indet., British North Borneo, Elmer 20412, type (BO).

(1397) *Meliola mitragynes* Syd., Philipp. Journ. Sci., C. Botany, 8: 478. 1913.

Cols. amphigenous, mostly epiphyllous, thin, effuse. Hyphae substraight to undulate, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or up to 40% opposite, spreading or antrorse, straight or slightly bent, 12—17 μ long; stc. cylindric, 3—5 μ long; hc. globose to short clavate, brodly rounded at apex, entire, straight or bent, 9—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. numerous, scattered, straight, simple, acute, to 425×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate constricted, 35—42×14—16 μ.

On *Mitragyna diversifolia*, Philippines, PBS 20253 (type), 25900, 20272;.

(1398) *Meliola alibertiae* Stev., Ann. Mycol. **26**: 258. 1928.

Cols. amphigenous, thin, to 10 mm .diam. Hyphae straight or undulate to sinuous, cells mostly 15—25×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or opposite in varying proportions, spreading, straight or bent, 16—22 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to cylindric, apex widely rounded, entire, straight or often bent, 11—17×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—35×6—8 μ, Ms. scattered and grouped around P., straight or flexuous, simple. obtuse or acute, to 460×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 43—50× 17—18 μ.

On *Alibertia edulis*, Panama, Stevens 145, type. — ? On *Rubiaceae* indet., Cuba, Fung. cub. Wright. 882 (K, SPEG), Wright 478 (K).

(1399) *Meliola thwaitesiana* Hansf., Sydowia 10: 94. 1957.

Cols. amphigenous, dense, to 3 mm. diam. or confluent, somewehat velvety. Hyphae substraight to undulate or flexuous, cells mostly 15—20×6—8 μ, branching usually opposite, subrectangular, closely reticulate-interwoven. Ch. opposite or about 10 μ alternate, antrorse or spreading, straight or slightly bent, 15—22 μ long; stc. cylindric, 2—6 μ long; hc. oblong to cylindric with rounded apex, entire, 11—18×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—25×7—9 μ. Ms. thinly scattered, straight, simple, acute, to 1100×9—11 μ. P. scattered, globose, verrucose, to 210 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 41—48× 18—20 μ.

On *Ixora coccinea*, Ceylon, Thwaites 419, type (K), mixed with *M. ixorae*.

(1400) *Meliola rechingeri* Hansf., Sydowia 11: 58. 1958.

Cols. amphigenous, thin, to 2 mm. diam. or confluent. Hyphae substraight to crooked, branching opposite at wide angles, loosely reticulate, cells mostly 20—30×4.5—6 μ. Ch. opposite or alternate, usually bent, antrorse or spreading, 10—13 μ long; stc. cylindric, 2—4 μ long; hc. ovate, oblong or subconoid with attenuate-rounded apex, entire, 7—10×4.5—6 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×5—6 μ. Ms. few, scattered thinly and grouped around P., simple, straight, acute, to 330×5—6 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 26—32×13—14 μ.

On *Psychotria* sp., Samoa, 1905, Rechinger (F).

This occurs mixed with *Meliola longiseta* Hoehn. in the type collection.

(1401) *Meliola malaneae* Stev. & Tehon, Mycologia, **18**: 17. 1926.

Cols. hypophyllous, thin, diffuse, large and irregular. Hyphae flexuous, 7—7.5 μ thick, branching opposite, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 16—21 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. subglobose to wide ovate, entire, 10—15×11—13 μ. Mh. mixed with ch., fairly numerous, ampulliform, opposite or alternate, 18—26×7—9 μ, neck elongate. Ms. few, thinly scattered and grouped around P., straight, simple, obtuse, to 1100×9—10 μ, gradually attenuate to about 3 μ at apex. P. scattered, verrucose, to 170 μ diam., surrounded by loosely radiating hyphae at base. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 46—53×16—19×14—16 μ.

On *Malanea* sp., Trinidad, Stevens 911 (type), 949 (FLS, F); — On *Psychotria* sp., Trinidad, Stevens 944.

A few colonies are epiphyllous, smaller and denser, with straight hyphae.

(1402) *Meliola mephitidiae* Yamam., Trans. Nat. Hist. Soc. Formosa **31**: 227. 1941.

Cols. hypophyllous, thin, effuse over large areas of leaf. Hyphae undulate to crooked, branching opposite or irregular, acute to wide, loosely reticulate-interwoven, cells mostly 20—35×5—7 μ. Ch. alternate or more scattered, straight or bent, 20—30 μ long; stc. cuneate, 6—16 μ long; hc. ovoid to ellipsoid, entire or sometimes rounded-angulose, often bent, 14—17×9—13 μ. Mh. mixed with ch., mostly alternate, narrow ampulliform, 21—30×5—7 μ, neck elongate, bent. Ms. mostly grouped around P., straight or slightly bent, simple, obtuse, to 470×8—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. bent cylindric to fusoid, obtuse, 4-septate, slightly constricted, 43—52×10—12 μ.

On *Mephitidia chinensis*, Formosa, Yamamoto, type (USDA).

(1403) *Meliola littoralis* Syd., Bothalia **2**: 462. 1928.

Cols. amphigenous, mostly epiphyllous, rather thin, to 5 mm. diam. or confluent. Hyphae straight to undulate or sinuous, cells 20—40×7—8 μ, branching opposite, acute, loosely reticulate. Ch. alternate or unilateral, more or less closely antrorse, straight or slightly bent, 23—30 μ long; stc. cuneate, 7—10 μ long; hc. ovoid to cylindric, entire, rounded at apex, 18—21×10—13 μ. Mh. separate, rather numerous, opposite or alternate, ampulliform, 13—16×7—9 μ. Ms. numerous, scattered, simple, obtuse to subacute, straight, to 640×8—10 μ. P. scattered, verrucose, to 240 μ diam., surface cells rounded, convex. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—45×17—20 μ.

On *Burchellia capensis*, South Africa, Medley Wood 653; — On *Gardenia globosa*, South Africa, PRET 2214, 9013, 9038; — On *G. rothmannia*, South Africa, PRET 11830, 11895; — On *Grumillea*

capensis, South Africa, PRET 11826, 11891; — On *G. cymosa*, South Africa, PRET 1575, 2521; — On *G. globosa*, South Africa, PRET 2366; — On *Keetia transvaalensis*, South Africa, PRET 11575; — On *Pavetta bowkeri*, South Africa, PRET 8377; — On *Plectronia ciliata*, South Africa, PRET 12188, 11346, 22459; — On *P. spinosa*, South Africa, PRET 10965; — On *Plectronia* sp., South Africa, PRET 17178, 17108, 14224, 17196, 17255; — On *Ixora* sp., Gold. Coast, Hughes in IMI 46812, 39781, 39782, 39784.

Note. Mr. F. C. Deighton informs me that some of the South African specimens listed above may not belong to *M. littoralis*, being closer to *M. psychotriae;* these include Medley Wood 653 on *Burchellia capensis*, PRET 11895 on *Gardenia rothmannia*, PRET 8377 on *Pavetta bowkeri*, PRET 32163 and 11826 on *Psychotria capensis*. The present author has not examined these specimens himself, and the list above is that of Doidge & Sydow, loc. cit.

(1404) *Meliola longiseta* Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **116**: 100. 1907.

Cols. mostly hypophyllous, thin, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 40—50×6—8 μ, branching opposite or irregular, acute, loosely reticulate-interwoven. Ch. alternate or more scattered, somewhat antrorse, straight or bent, 20—35 μ long; stc. cuneate to cylindric, 6—14 μ long; hc. oblong to clavulate, entire or irregularly lobate, 14—22×11—17 μ. Mh. mixed with ch., alternate, ampulliform, 28—38×7—9 μ, neck elongate, 3 μ thick. Ms. grouped around P., straight, simple, obtuse, to 1000×11—13 μ, gradually attenuate to 3—4 μ at rounded apex. P. loosely scattered, verrucose, to 200 diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×17—18×14—15 μ.

On *Psychotria* sp., Samoa, Rechinger, type (Von Hoehnel in F).

Epiphyllous colonies have slightly undulate hyphae with cells mostly 20—30×7—8 μ; ch. alternate, antrorse, straight or bent, 20—30 μ long; stc. cuneate, 5—10 μ long; hc. ovate, angulose to deeply and irregularly crenate-lobulate, 16—20×7—9 μ. Ms. few, grouped around P., straight, simple, obtuse, to 800×13—15 μ, attenuate to 3—5 μ at apex. P. to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—43×17—21×14—15 μ.

(1405) *Meliola africana* Hansf., Sydowia **10**: 62. 1957.

Cols. amphigenous, mostly epiphyllous, to 3 mm. diam., dense, velvety. Hyphae undulate to sinuous, cells 20—30×8—9 μ. branching opposite or irregular, acute or wide, closely reticulate and sometimes almost solid. Ch. alternate, spreading or antrorse, straight or slightly bent, 20—30 μ long; stc. cuneate to cylindric, 5—11 μ long; hc. subglobose to ovate or cylindric-clavate, entire, broadly rounded at apex, 13—23×10—16 μ. Mh. usually on separate hyphae, rarely mixed with ch., sometimes numerous, opposite or alternate, conoid

to ampulliform, 15—23×7—10 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, obtuse, to 680×8—11 μ. P. scattered, verrucose, to 180 —230) μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 37—48×16—19×13—15 μ.

On *Psychotria* sp., Uganda, Hansford 1854 (type), 1986; — On *Tarenna* sp., Sierra Leone, Deighton 2018; — On *Ixora radiata*, Sierra Leone, Deighton 1982; — On *Pouchetia africana*, Sierra Leone, Deighton 2483, 3641; — On *Morinda geminata*, Sierra Leone, Deighton 445, 1975, 1788, 2373; — On *Chasalia curviflora*, Java, BO 14437.

(1406) *Meliola eveae* Stev., Ann. Mycol. **26**: 247. 1928.

Cols. hypophyllous, thin, diffuse, indefinite. Hyphae sinuous to flexuous or tortuous, branching opposite or irregular at wide angles, loosely interwoven-reticulate, cells mostly 35—50×4.5—5.5 μ. Ch. alternate or more scattered, spreading or subantrorse, straight or slightly bent, 17—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate, entire, 12—16×8—11 μ. Mh. mixed with ch., alternate, conoid to ampulliform, 15—18×6—7 μ. Ms. grouped around P., straight, simple, obtuse, to 230×6—7 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. bent fusoid, obtuse, 4-septate, slightly constricted 40—45×9—10 μ.

On *Evea* sp., British Guiana, Stevens 93 (FLS, F).

(1407) *Meliola smallii* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 282. 1937.

Cols. hypophyllous, effuse, thin, velvety. Hyphae sinuous to crooked, cells mostly 20—50×5—6 μ, branching opposite or irregular, at wide angles, loosely reticulate and interwoven. Ch. alternate or scattered, usually on outside of the bends in the hyphae and often behind the distal septum of the parent cell, spreading, straight or bent, 14—30 μ long; stc. cylindric, often bent, 3—15 μ long; hc. ovate, rarely subglobose to slightly angulose, rounded or somewhat pointed at apex, usually entire, 11—15×7—10 μ. Mh. separate, few, mostly alternate, narrow ampulliform, 20—28×5—6 μ, neck elongate. Ms. scattered or grouped around P., straight, simple, obtuse, to 1100×8—10 μ, attenuate upwards to 3—4 μ at apex. P. loosely scattered, verrucose, to 160 diam. Sp. cylindric, obtuse, straight or bent, 4-septate, constricted, 33—42×9—10 μ.

On *Cephaelis suaveolens*, Uganda Hansford 1367 (type) 2530; — On *Psychotria vogeliana*, Togoland, Hughes in IMI 39730, 39731; — On *Rubiaceae* indet., Congo Belge, Vanderyst 35514, 38922, 38933, 39057, 39107, 39111; — On *Palicourea obscurata*, Venezuela, Soltero 793 (CUP); — On *Psychotria ?warneckei*, Gold Coast, Hughes in IMI 39833.

(1407-a) *Meliola deformis* Deight., Sydowia **11**: 102. 1957.

Cols. caulicolous, very dense, velvety, strongly adherent, to

15 mm. long and wide. Hyphae substraight to flexuous, branching irregular, very closely reticulate and nearly solid, cells mostly 8—20 × 5—8 μ. Ch. alternate, straight, antrorse or spreading, 17—33 μ long; stc. cylindric, 3—20 μ long; hc. subglobose to ovate, entire or angulose, 13—22 × 11—18 μ. Mh. alternate or opposite, ampulliform, 12—26 × 8—9 μ, mixed with ch., or often on separate hyphae. Ms. very numerous, substraight or irregularly flexuous, simple, obtuse to subacute, to 330 × 8—10 μ, the upper part closely twisted and appearing torulose. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—38 × 12—15 × 11—12 μ.

On *Uncaria africana*, Sierra Leone, Deighton 6124, type (IMI 57687), 6098, 6120.

(1407-b) *Meliola imperspicua* Deighton, Sydowia **11**: 107. 1958.

Cols. hypophyllous, very thin, slightly velvety, to 10 mm. diam. Hyphae slightly sinuous, branching opposite at wide angles, very loosely reticulate, cells mostly 30—45 × 4—6 μ. Ch. alternate, antrorse, straight, 14—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. entire, straight, mostly ovate with obtusely attenuate apex, or subglobose with rounded apex, sometimes clavate, 10—15 × 8—11 μ. Mh. mixed with ch., alternate, ampulliform, 15—25 × 5—8 μ. Ms. few, mostly grouped around P., straight or sometimes slightly curved, obtuse, to 450 × 7—8 μ. P. scattered, verrucose, to 120 μ diam. Sp. oblong to fusoid, sometimes slightly cuneate, obtuse, curved in side view, 4-septate, very slightly constricted, 32—39 × 9—10 × 9—10 μ.

On *Psychotria warneckei*, Sierra Leone, Deighton 2265 (IMI 25553-d, type), 2280 (IMI 25552-c).

Meliola psychotriae Group.

The Beeli formula of the species and varieties we classify here varies from 3111.4222 through 3111.4221, 3111.3222 to 3111.3221. The group is represented by a large number of collections on a variety of hosts, and almost every individual collection shows some departure from a central type; unfortunately variation in one character is usually independent of that in others, and it is a matter of extreme difficulty to arrive at a satisfactory separation into species and varieties. The colonies vary from thin to dense, and are sometimes velvety; the hyphae from substraight to undulate or sinuous; the capitate hypophodia are usually rather closely antrorse, the forms with spreading hypophodia being here classified as varieties of *M. kibirae;* the head cells vary from rather small ovate to much larger ovate-piriform, and are sometimes rather pointed at the apex, almost always entire; the mucronate hypophodia are usually on separate hyphae; the mycelial setae vary from few to numerous, scattered or grouped around the perithecia, always obtuse and simple; the perithecia show

little variation throughout the group; and finally the spores vary considerably in length and breadth between the various forms.

The separation into species and varieties adopted here is regarded as conservative. *Meliola mitchellae* is very close to *M. psychotriae*, the only major difference being the presence in many collections of mycelial setae having acute apices when fully mature, though the type collection shows very few of these.

(1408) *Meliola oldenlandiae* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 279. 1937.

Cols. amphigenous, to 4 mm. diam., frequently widely confluent, thin. Hyphae undulate, cells mostly 20—30×6—7 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 16—22 μ long; stc. cuneate, 3—6 μ long; hc. globose to widely ovate, entire, 12—15×10—13 μ. Mh. separate, opposite, ampulliform to conoid, 15—18×6—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 360×9 μ, the apex torulose or twisted not uncinate. P. scattered or in a loose central group, to 150 μ diam., verrucose. Sp. oblong, obtuse, 4-septate, slightly constricted, 30—36×12—13 μ.

On *Oldenlandia decumbens*, Uganda, Hansford 1253, type.

(1409) *Meliola ghesquierei* Hansf., Sydowia Beih. **1**: 108. 1957.

Cols. epiphyllous, thin, to 1 mm. diam. Hyphae substraight, to undulate, branching opposite, acute, loosely reticulate, cells mostly 15—20×6—7 μ. Ch. alternate, subantrorse, straight or bent, 15—21 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. cylindric to clavulate, widely rounded at apex, entire, 10—17×7—9 μ. Mh. very few, mixed with ch., alternate or opposite, ampulliform, 13—17×6—8 μ. Ms. grouped around P., straight, simple, obtuse, to 330×7—8 μ (?immature). P. scattered, slightly verrucose, to 140 μ diam. Sp, oblong to subellipsoid, obtuse, 4-septate, constricted, 38—42×18—21 μ.

On *Coffea (?robusta)*, Congo Belge, Ghesquiere 19, type (BRUX); — On *Rubiaceae* indet., Oubangui, Thollon 40 (Herb. Patouillard in F).

(1410) *Meliola tunkiaensis* Hansf. & Deight., Mycol. Paper IMI **23**: 63. 1948.

Cols. amphigenous, mostly hypophyllous, dense, subvelvety, to 1 mm. diam. Hyphae substraight to undulate, cells mostly 20—25×8 μ, branching close, opposite at wide angles, densely reticulate. Ch. alternate, often bent, spreading, 22—30 μ long; stc. cylindric to cuneate, usually straight, 5—9 μ long; hc. ovate to clavate-oblong, widely rounded at apex, entire, 13—23×10—14 μ. Mh. few, on separate hyphae (sometimes none), usually alternate, narrow conoid to ampulliform, 18—22×9 μ. Ms. scattered, straight, simple, obtuse, to 250×9—10 μ. P. in central group, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 38—45×15—19 μ.

On *Aidia genipaeflora*, Sierra Leone, Deighton 1990, type. (? on unknown host, ? Rubiaceae, Peru, Stevens 78); — On *Randia mitis*, Jamaica, Thaxter 7446 (F); — On *R. platanta*, Cameroun, Jacques-Felix 4691 (P).

(1411) *Meliola psychotriae* Earle var. *densa* Hansf. & Deight., Mycol. Paper, IMI **23**: 62. 1948.

Cols. amphigenous, dense, to 1 mm. diam., not confluent. Hyphae substraight to slightly undulate, cells mostly 15—25×9—10 μ, branching opposite at wide angles, very densely reticulate. Ch. alternate, usually closely antrorse, straight or slightly bent, 20—30 μ long; stc. cylindric to cuneate, 6—13 μ long; hc. ovate, rounded at apex, straight or slightly bent, entire, 14—18×11—13 μ. Mh. few, on separate hyphae, ampulliform, opposite or alternate, 15—19×7—9 μ. Ms. few, mostly grouped P., straight, simple, obtuse, to 250×8—9 μ. P. in close central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—45×15—20 μ.

On *Morinda lucida*, Gold Coast, Deighton CB 946, type.

(1412) *Meliola psychotriae* Earle var. **moreliae** Hansf. & Deight., var. n.

Cols. amphigenous, to 3 mm. diam., scattered, not confluent, dense. Hyphae substraight to sinuous, cells mostly 12—20×7—8 μ, branching opposite at wide angles, closely reticulate and usually subsolid. Ch. alternate, more or less closely antrorse, straight or slightly bent, 18—28 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. ovate to clavate, entire or slightly rounded-angulose, rarely sublobate, 12—17×9—12 μ. Ms. few to rather numerous, scattered, straight or somewhat bent below apex but not uncinate, simple, obtuse, to 320×9—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 39—47×16—19 μ.

On *Morelia senegalensis*, Sierra Leone, Deighton 2310, type.

(1413) *Meliola psychotriae* Earle, Bull. N. York Bot. Gard., **3**: 308. 1905.

Cols. epiphyllous, rather dense, velvety, to 2 mm. diam. or confluent, often numerous and small. Hyphae slightly undulate, cells mostly 15—25×6—7 μ, branching opposite, acute or wide, closely reticulate. Ch. alternate, more or less closely antrorse, straight or bent, 16—22 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate, rounded or somewhat pointed at apex, entire, 11—15×7—10 μ. Mh. fairly numerous, on separate hyphae, opposite or alternate, ampulliform, 12—20×6—8 μ. Ms. scattered and grouped around P., numerous, straight, simple, obtuse, to 300×7—8 μ. P. scattered, or in a loose central group, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 34—40×14—16×11—13 μ.

On *Psychotria* sp., Porto Rico, Heller 6252, type (K); — On *Pavetta indica*, Java, BO 12104; — On *Exostemma elegans*, San Do-

mingo, Ciferri, Mycofl. doming. exs. 61-bis (K); — On *Rothmannia lane-poolei*, Sierra Leone, Deighton 1981; — On *Psychotria bidentata*, Sierra Leone, Deighton 1940, 2098, 2026, with setae to 480 μ long; — On *Pentas* sp., Congo Belge, Hendrickx 2721, with thinner cols.; — On *Pentas longiflora*, Uganda, Hansford 1556; — On *Borreria* sp., Venezuela, Chardon & Toro 194 (CUP); — On *B. suaveolens*, Venezuela, Chardon & Toro 479 (CUP); — On *Sabicea hirsuta*, Ecuador, Stevens 74 (FLS); — On *Neonauclea* sp., Philippines, Stevens 433 (FLS); — On *Mussaenda* sp., Borneo, Clemens s. n. (BM); — On *Rubiaceae* indet., Brazil, Usteri 93 (S); Congo Belge, Vanderyst 2075; Porto Rico, Stevens 8546, 8550; — On *Guettarda ovalifolia*, Porto Rico, Stevens 234 (FLS).

(1414) *Meliola psychotriae* Earle var. *coffeae* Hansf. & Deight., Sydowia **10**: 83. 1958.

Cols. amphigenous, mostly hypophyllous, thin, 2—3 mm. diam. Hyphae substraight to slightly undulate, cells mostly 25—30×7 μ, branching opposite or alternate at wide angles, loosely reticulate. Ch. alternate, more or less closely antrorse, 20—30 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to cylindric-clavate, rounded at apex, entire, straight or slightly bent, 15—21×10—13 μ. Mh. separate, few, opposite or alternate, ampulliform to conoid, 13—18×7—8 μ. Ms. few, mostly grouped around P., straight, simple, obtuse, to 200×7—8 μ. P. loosely scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—42×15—18 μ.

On *Coffea stenophylla*, Sierra Leone, Deighton 1365 (type), 1922.

(1416) *Meliola psychotriae* Earle var. **longiseta** Hansf., comb. n. = *Meliola mitchellae* Cooke var. *longiseta* Hansf., Journ. Linn. Soc. London, **51**: 279, 1937.

Cols. amphigenous, usually minute but very numerous and confluent, thin, thinly velvety. Hyphae sinuous to flexuous, cells mostly 20—40×6—7 μ, branching alternate or opposite, acute, thinly interwoven-reticulate. Ch. alternate, more or less closely antrorse, usually straight or slightly bent, 18—31 μ long; stc. cylindric to cuneate, 4—11 μ long; hc. ovate, apex rounded or rather pointed, entire, 14—20×9—12 μ. Mh. separate, mostly alternate, conoid to ampulliform, 12—19×7—8 μ. Ms. thinly scattered, straight or somewhat flexuous, simple, obtuse to acute, to 1200×8—10 μ, often subtorulose below apex. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—38×13—16 μ.

On *Psychotria nigropunctata*, Uganda, Hansford 3671 (type), 1752, 1939, 2027, 2326, 2605, 3123, 3203, 3284, 3355, 3132, 3567; — On *Oxyanthus* sp., Uganda, Hansford 2576, 2579, 2784, 3134; — On *Psychotria* sp., Ecuador, Stevens 83 (FLS, F); — On *Pavetta baconia*, Uganda, Hansford 3726; — On *Pavetta* sp., Sierra Leone, Deighton 4054-a; Gold Coast, Hughes in IMI 49250-a.

(1417) *Meliola psychotriae* Earle var. *gonzalagunae* Cif., Mycopathologia **7**: 179. 1954.

Cols. epiphyllous, dense, 1—2 mm. diam., velvety. Hyphae substraight to slightly undulate, cells mostly 20—25×6—7 μ, branching alternate or irregular, rarely opposite, acute to wide, becoming rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to wide ovate or sometimes slightly angulose, 11—15×10—12 μ. Mh. few to numerous, usually separate, opposite or alternate, ampulliform, 17—26×6—7 μ. Ms. scattered, fairly numerous, straight or slightly flexuous, simple, obtuse, to 320×6—8 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—34×12—14 μ.

On *Gonzalaguna (Duggena) spicata*, San Domingo, Ekman 15379, type; Porto Rico, Stevens 9271, 7388, 7592, 7046, 7910, 9371, 7045, 7793, 7044, Whetzel 2789; Venezuela, Chardon & Toro 500, Allart 225 (CUP); Grenada, Thaxter 7392 (F).

(1418) *Meliola mycetiae* Stev., Philipp. Journ. Sci. **56**: 70. 1935.

Cols. amphigenous, to 2 mm. diam., subdense. Hyphae undulate to crooked, cells mostly 20—35×6—7 μ, branching opposite, acute to wide, loosely reticulate. Ch. alternate, antrorse, straight or slightly bent, 20—30 μ long; stc. cuneate to cylindric, 6—10 μ long; hc. ovate, entire, rounded to slightly pointed at apex, 16—22×8—10 μ. Mh. separate, alternate or opposite, ampulliform, 16—22×7—9 μ. Ms. few, mostly grouped around P., straight, simple, obtuse, to 260×7 μ, often slightly undulate to subtorulose in upper part. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—40×14—16×12—13 μ.

On *Mycetia javanica*, Philippines, Stevens 1669 (FLS), type.

(1419) *Meliola kibirae* Hansf. & Stev. var. *randiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 60. 1948.

Cols. amphigenous, to 2 mm. diam., usually numerous and confluent, dense. Hyphae substraight to sinuous or flexuous, cells mostly 25—30×6—7 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate or more scattered, straight or bent, at wide angles, 20—30 μ long; stc. cylindric to cuneate, straight or bent, 5—15 μ long; hc. ovate to clavate, often somewhat angulose to sublobate, 13—20×8—14 μ. Mh. mostly on separate hyphae, opposite or alternate, conoid to ampulliform, 15—20×6—8 μ. Ms. closely scattered, straight, simple, obtuse, to 270×7—9 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—36×10—15 μ.

On *Rothmannia longiflora*, Sierra Leone, Deighton 1564 (type), 434; — On *R. lane-poolei*, Sierra Leone, Deighton 2170; — On *R.* sp. indet., Congo Belge, Hendrickx 850.

(1420) *Meliola kibirae* Hansf. & Stev., var. *leonensis* Hansf. & Deight., Mycol. Paper, IMI **23**: 59. 1948.

Cols. hypophyllous or amphigenous, very thin, to 5 mm. diam. Hyphae substraight to sinuous or crooked, cells mostly 25—35 × 6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, spreading, usually straight, 17—24 μ long; stc. cylindric to cuneate, 5—8 μ long; hc. clavate to oblong, widely rounded at apex, entire, 13—17 × 9—12 μ. Mh. separate, mostly alternate, conoid to ampulliform, 15—20 × 7—8 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 280 × 7—8 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—37 × 11—15 μ.

On *Rothmannia urcelliformis*, Sierra Leone, Deighton 990 (type); — On *Pavetta smythei*, Sierra Leone, Deighton 1978.

(1421) *Meliola mussaendae-arcuatae* Hansf., Sydowia **11**: 57. 1958.

Cols. epiphyllous, thin to subdense, to 3 mm. diam., velvety. Hyphae substraight to somewhat flexuous, cells mostly 20—30 × 6—8 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate, subantrorse, usually straight, 14—22 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose to ovate, entire, widely rounded at apex, 11—16 × 11—13 μ. Mh. mixed with ch., or rarely separate, opposite or alternate, conoid to ampulliform, 14—18 × 6—8 μ. Ms. closely scattered and grouped around P., straight to slightly flexuous, simple, very obtuse, to 280 × 7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—41 × 13—16 μ.

On *Mussaenda arcuata*, Uganda, Hansford 3668 (type), 3184, 3463, 3615; — On *Craterispermum laurinum*, Uganda, Hansford 2629, 3196, 3225; — On *Rubiaceae* indet., Panama, Standley 25711, 29646 (F); Congo Belge, Vanderyst 2032 (BRUX); — On *Psychotria cristata*, Uganda, Hansford 3378.

(1421-a) *Meliola uncariicola* Deighton, Sydowia **11**: 42. 1958.

Cols. epiphyllous, rarely also hypophyllous, subdense, to 4 mm. diam., strongly parasitic and causing purplish-red leafspots. Hyphae substraight, branching alternate, acute, subdensely reticulate, cells mostly 18—27 × 7—9 μ. Ch. alternate (very rarely opposite), antrorse, straight, 16—18 μ long; stc. cylindric, 4—6 μ long; hc. subglobose or widely and shortly ovate, entire, 10—13 × 10—13 μ. Mh. few, separate, alternate or opposite, ampulliform, 15—20 × 8—10 μ. Ms. scattered, slightly flexuous to sigmoid, obtuse, gradually attenuate to apex 3—4 μ wide, to 520 × 9—11 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—42 × 12—12.5 × 11—12 μ.

On *Uncaria dasyoneura*, Malaya, Johnston 947 p. p. (IMI 62487-a, type).

(1422) *Meliola vicina* Syd., Ann. Mycol. 21: 95. 1923.

Cols. mostly hypophyllous, on upper surface to 1 mm. diam., on lower surface to 3 mm. diam. or confluent, thin to subdense. Hyphae substraight to undulate or crooked, branching opposite at wide angles, loosely to rather closely reticulate, cells mostly 15—30×6—8 μ. Ch. alternate or very rarely opposite, usually bent, especially on lower surface of leaf, spreading or antrorse, 16—22 μ long; stc. cylindric, 3—6 μ long; hc. oblong, often sharply bent, entire or with slightly crenulate-angulose margin, 11—15×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—22×7—9 μ. Ms. mostly grouped around P., more or less straight, simple, gradually attenuate to obtuse apex, to 540×7—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—41×14—17 μ.

On *Timonius ternifolius*, Philippines, PBS 8886, type (FLS).

(1423) *Meliola amphigena* Stev. & Tehon, Mycologia 18: 16. 1926.
= *Meliola vicina* Syd. var. *minor* Hansf. & Deighton, Mycol. Paper IMI 23: 59. 1948.

Cols. amphigenous, to 2 mm. diam., rather thin, nearly smooth. Hyphae substraight to undulate, cells mostly 15—22×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, often slightly recurved, 10—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose, entire, 8—10×8—11 μ. Mh. mixed with ch., rather few, mostly alternate, conoid to ampulliform, 15—19×7—8 μ. Ms. few, mostly grouped around P., straight, simple, obtuse, to 275×8 μ. P. scattered, verrucose, to 120 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 28—35×12—14×10—12 μ.

On *Rubiaceae* indet., British Guiana, Stevens 168 (type), 413, 450; — On *Borreria laevis*, San Domingo, Ciferri, Mycofl. doming. exs. 259; Trinidad, Baker in IMI 19346, 37685, Wakefield in IMI 34647; Porto Rico, Stevens 8090, 8593, 8598; Chardon 372 (CUP); — On *Borreria ocimoides*, Porto Rico, Stevens s. n. (FLS 6157); — On *Borreria* sp., Grenada, Thaxter 7497 (F); Trinidad, Thaxter 7473 (F); Costa Rica, Stevens 365, 472; Panama, Stevens 737, 1276, 472; Jamaica, Hansford 565; — On *Borreria capitata*, Venezuela, Chardon & Toro 306, 570 (CUP); — On *Palicourea* sp., Porto Rico, Stevens 316; — On *Coccocypselum repens*, Porto Rico, Stevens 8961; — On *Isertia* sp., Panama, Stevens 1268; — On *Hamelia erecta*, Panama, Stevens 1341; Honduras, Standley 53852, 55678 (USDA); — On *Coccocypselum* sp., British Guiana, Stevens 604; — On *Hemidiodia ocimifolia*, San Domingo, Ciferri 2850 (S); — On *Virecta multiflora*, Sierra Leone, Deighton 1434, 2117.

(1424) *Meliola ouroupariae* Stev., Ann. Mycol. **26**: 246. 1928.

Cols. epiphyllous, dense, velvety, to 5 mm. diam. Hyphae slightly undulate, branching opposite, acute, closely radiating-reticulate, cells mostly 20—40×5—6 μ. Ch. alternate, subantrorse, usually straight, 13—16 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to ovate, entire, 10—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ, neck elongate. Ms. numerous, scattered and grouped around P., straight, simple, obtuse to slightly clavate, to 200×6 μ. P. scattered, verrucose, to 140 diam. Sp. oblong, obtuse, 4-septate, constricted, 27—32×9—12 μ.

On *Uncaria tomentosa*, Costa Rica, Stevens 800, type (FLS).

(1425) *Meliola galopinae* Hansf., Sydowia **10**: 73. 1957.

Cols. amphigenous, to 1 mm. diam., thinly setose. Hyphae undulate to sinuous, cells mostly 25—35×6—7 μ, branching opposite or alternate, at varying angles, loosely radiating-reticulate and interwoven. Ch. alternate, spreading or closely antrorse, usually straight, 17—26 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. ovate to cylindric, entire, rounded at apex, 11—17×7—9 μ. Mh. rather few, mixed with ch., opposite or alternate, ampulliform, 13—22×7—9 μ. Ms. thinly scattered and grouped around P., straight or slightly flexuous, simple, obtuse, to 400×7—8 μ, tapering gradually to the apex 3—4 μ thick. P. single or few in a loose central group, verrucose, to 180 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 26—32×10—14 μ.

On *Galopina circaeoides*, South Africa, PRET 1760, 17752, 12323, 32214, 29926.

(1426) *Meliola sabiceae* Ciferri, Mycopathologia **7**: 181. 1954.

Cols. amphigenous, 0.5—1 mm. diam., scattered. Hyphae tortuous, 5—6 μ thick, irregularly branched, densely interwoven-reticulate. Ch. alternate or unilateral, 16—22×7—9 μ; stc. 3—8 μ long. Mh. ampulliform, alternate or opposite, mixed with ch., 15—19×6—7 μ. Ms. few, scattered and grouped around P., more or less straight, obtuse or sometimes inflated or contorted at apex, to 360 μ long. P. verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 26—30×11—13 μ.

On *Sabicea hirsuta*, San Domingo, Ekman 3249, type.

Ciferri regarded the setae grouped around the perithecia as of perithecial origin and hence gave the formula as 3411.; his drawings show the setae merely obtuse and slightly torulose, thus resembling those of *Meliola oldenlandiae*. Specimens have not been available to the present author, who is therefore uncertain where to place this species.

(1427) *Meliola lictorea* Ciferri, Ann. Mycol. **36**: 214. 1938.

Cols. mostly epiphyllous, to 3 mm. diam., dense, crustose, velvety. Hyphae substraight to undulate, cells mostly 15—20×6—7 μ,

branching opposite or irregular, acute or wide, densely reticulate and almost solid. Ch. alternate, spreading, straight or bent, 18—31 μ long; stc. cylindric, 3—10 μ long; hc. versiform, often bent, oblong-clavate and nearly entire, to very irregularly and deeply lobate, 14—21 × 9—15 μ. Mh. separate, opposite or alternate, ampulliform, 15—22 × 7—9 μ. Ms. numerous, scattered, straight, simple, obtuse, to 500 × 8—11 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, rather strongly constricted, 37—42 × 17—19 μ, central cell often the largest.

On *Exostemma sanctae-luciae*, San Domingo, Ciferri, Mycofl. doming. exs. 239, type.

(1428) *Meliola feretiae* Hansf., Sydowia 10: 71. 1958.

Cols. epiphyllous, to 0.5 mm. diam., subdense, thinly velvety. Hyphae substraight to flexuous, cells mostly 20—30 × 9—11 μ, branching alternate or opposite at wide angles, closely reticulate. Ch. alternate, more or less antrorse, usually straight, 20—28 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to wide clavate, broadly rounded at apex, entire, 14—19 × 10—14 μ. Mh. separate in centre of colony, opposite, ampulliform to conoid, 13—17 × 8—9 μ. Ms. thinly scattered, straight, simple, subacute to obtuse, to 320 × 8—10 μ, gradually attenuate to apex. P. central, often single, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 42—47 × 16—20 μ.

On *Feretia* sp., Congo Belge, Hendrickx 2527, type.

(1429) *Meliola randiae-aculeate* Hansf., Sydowia 9: 74. 1955.

Cols. mostly epiphyllous, to 3 mm. diam., loose to dense, sometimes confluent. Hyphae substraight, cells mostly 25—35 × 7—10 μ, branching opposite or irregular, acute, loosely to closely reticulate. Ch. alternate, antrorse, straight, 25—35 μ long; stc. cuneate, 6—15 μ long; hc. ovate with pointed or rounded apex, entire, 18—24 × 9—14 μ. Mh. few, separate, alternate or opposite, ampulliform, 15—20 × 7—10 μ. Ms. closely scattered and grouped around P., straight, simple, obtuse to subacute, to 450 × 8—10 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—45 × 17—20 μ.

On *Randia aculeata*, San Domingo, Ciferri 2781, type (S); Jamaica, Martyn in IMI 34808, 19660, 34208; Porto Rico, Whetzel 607, 608, Seaver 73, Chardon 880, 886 (CUP); Stevens 7301, 9353, 7757, 4935, 7351, 1162, 6671, Fink 1173 (FLS); — On *Rondeletia amoena*, Panama, Stevens 93 (FLS).

(1430) *Meliola kibirae* Hansf. & Stev. var. *petungae* Hansf., Reinwardtia **3**: 103. 1954.

Cols. amphigenous, thin to dense, 1 mm. diam. on upper surface, larger below, thinly velvety. Hyphae substraight to undulate, cells mostly 20—30 × 6—7 μ, branching opposite or irregular at acute

angles, loosely to sub-densely radiating-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. ovate to subglobose, entire, 10—15×9—11 μ. Mh. mostly separate, opposite or alternate, ampulliform, 16—22×7—9 μ. Ms. thinly scattered and grouped around P., straight, simple, acute to obtuse, to 530×7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 29—35×13—15×11—12 μ.

On *Petunga roxburghii*, Java, BO 13006, type.

(1431) *Meliola psychotriae* Earle var. *rondeletiae* Hansf., Sydowia **10**: 84. 1957.

Cols. amphigenous, to 3 mm. diam. or confluent, thin. Hyphae flexuous to crooked, cells mostly 20—30×6—8 μ, branching opposite, acute to wide, closely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or bent, 15—23 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose to ovate, rounded or slightly pointed at apex, entire, rarely rounded-angulose to sublobate, versiform, 12—16×9—14 μ. Mh. separate, opposite or alternate, bent ampulliform, 15—20×6—7 μ. Ms. fairly numerous, scattered, straight, simple, obtuse to acute, to 600×7—8 μ, gradually attenuate upwards, those around P. shorter. P. in loose central group or scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 27—35×13—15×11—13 μ.

On *Rondeletia purdiei*, Venezuela, Sydow, Fung. exot. exs. 798, type; — On *R. brachycarpa*, San Domingo, Ciferri, Mycofl. doming. exs. 257, Ciferri 2358; — On *R. pubescens*, Venezuela, Muller 2873 (CUP); — On *R.* sp., Venezuela, Chardon et al. 317 (CUP).

(1432) *Meliola canthii* Hansf., Proc. Linn. Soc. London **157**: 22. 1945.

Cols. amphigenous or caulicolous, mostly epiphyllous, dense, velvety, subcrustose, to 3 mm. diam. Hyphae substraight to undulate, cells 20—40×7—9 μ, branching mostly alternate or irregular at acute angles, densely interwoven-reticulate and radiating. Ch. alternate, usually bent, more or less antrorse, 24—30 μ long; stc. cylindric to cuneate, 7—12 μ long; hc. versiform, cylindric-clavate or rounded-angulose to shallowly 2—4-lobate, 15—21×11—17 μ, often bent to uncinate. Mh. few, mixed with ch., ampulliform. Ms. numerous, straight, simple, acute, to 380×9—11 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted slightly, 40—52×12—16 μ, the middle cell often slightly the largest.

On *Canthium vulgare*, Uganda, Hansford 1912, 2300 (type), 2862, 3227.

(1433) *Meliola mitragynicola* Deight., Sydowia **11**: 110. 1958.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., subdense, slightly velvety; hypophyllous cols. to 8 mm. diam. Hyphae

substraight to somewhat sinuous, branching alternate or opposite at wide angles, rather closely reticulate, cells mostly 20—30×5—9 μ. Ch. alternate, antrorse or sometimes spreading, usually straight, 20—30 μ long; stc. cylindric to cuneate, straight or antrorsely bent, 4—14 μ long; hc. subglobose to ovate or on lower surface often cuneate to clavate, usually entire, sometimes slightly angulose to sublobate, 13—18×10—15 μ. Mh. separate, alternate or opposite, ampulliform, 10—20×6—8 μ. Ms. scattered, straight to somewhat flexuous, simple, gradually attenuate to acute apex, the upper part closely twisted and appearing torulose, to 390×8—9 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—46× 14—16×13—14 μ.

On *Mitragyna stipulosa*, Sierra Leone, Deighton 5791-a, type (IMI 56524-a); Gold Coast, Hughes in IMI 46769-a, 46771-a; Sierra Leone, Deighton 2398 p. p., 1328 p. p., 2250 p. p.

(1434) *Meliola mitragynicola* Deight. var. *leonensis* (Hansf. & Deight.) Deight., Sydowia **11**: 111. 1958.

(3111.3222)

= *Meliola canthii* Hansf. var. *leonensis* Hansf. & Deight., Mycol. Papers, IMI, **23**: 59. 1948.

Cols. hypophyllous, thin to subdense, subvelvety, to 10 mm. diam. Hyphae sinuous to crooked, branching opposite or usually irregularly alternate, acute, loosely to closely interwoven-reticulate, cells mostly 25—35×5—7 μ. Ch. alternate or more scattered, sometimes few and distant, straight or bent, 18—50 μ long; stc. cuneate to cylindric, 6—25 μ long; hc. from subglobose and entire to irregularly angulose and elongate, or cylindric-clavate, versiform, straight or bent, rounded to truncate at apex, 13—25×10—16 μ. Mh. few, mostly separate, alternate, rarely opposite, ampulliform, 15—20×6—7 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 340×6—8 μ, the upper part slightly to closely twisted-torulose. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—40×12—13×11—12 μ, mostly 33—38 μ long.

On *Mitragyna stipulosa*, Sierra Leone, Deighton 2398 p. p., type (IMI 25516-a).

(1435) *Meliola mitragynicola* Deight. var. *ugandensis* Deight., Sydowia **11**: 111. 1958.

Cols. amphigenous, dense or subdense, slightly velvety, to 6 mm. diam. Hyphae straight to slightly sinuous, branching opposite, acute to wide, closely reticulate, cells mostly 14—22×6—8 μ. Ch. alternate, usually straight, antrorse to somewhat spreading, 21—36 μ long; stc. cylindric to cuneate, 6—18 μ long; hc. subglobose, elliptic or clavate, entire or sometimes angulose to sublobate, usually straight, 14—21× 11—14 μ. Mh. separate, alternate or opposite, ampulliform, 10—18× 7—9 μ. Ms. scattered, straight or often slightly bent to flexuous,

simple, gradually attenuate to acute apex, to 370×8—10 μ, the upper part closely twisted-torulose. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—53×16—18×14—16 μ.

On *Mitragyna stipulosa*, Uganda, Hansford 2951, type (IMI 25518-a).

(1436) *Meliola kibirae* Hansf. & Stev. var. *mussaendae* Hansf., Reinwardtia **3**: 103. 1954.

Cols. epiphyllous, thin, to 1 mm. diam. Hyphae crooked, cells mostly 20—40×5—6 μ, branching irregular, loosely reticulate with rounded meshes and the hyphae often in strands of 2—3. Ch. alternate, spreading, straight or bent, 11—23 μ long; stc. cylindric, 2—8 μ long; hc. globose to ovate, sometimes truncate or angulose, usually entire, 8—15×8—12 μ. Mh. mixed with ch., alternate, ampulliform, 12—18×6—8 μ. Ms. grouped around P., straight, simple, acute, to 600×8—9 μ. P. in loose central group, verrucose to nearly smooth, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—39×12—15 μ.

On sepals of *Mussaenda frondosa*, Java, BO 3700, type; Massart 799 (BRUX).

(1437) *Meliola ixorae* Yates, Philipp. Journ. Sci., C, Botany, **12**: 365. 1917.

Cols. amphigenous, to 15 mm. diam., thin, often confluent. Hyphae crooked, cells mostly 25—40×5—8 μ, branching opposite or irregular, at wide angles, loosely reticulate. Ch. alternate or more scattered, more or less antrorse, straight or bent, 17—30 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. versiform, from subglobose to sublobate, rarely entire, 12—23×10—15 μ. Mh. few, separate, alternate, ampulliform, 16—22×6—7 μ. Ms. scattered, mostly grouped around P., to 750×8—10 μ, straight or slightly flexuous, simple, acute. P. scattered, slightly verrucose, to 180 μ diam. Sp. subfusoid, straight or bent, ends rounded, somewhat attenuate, 4-septate, slightly constricted, 33—40×9—12 μ.

On *Ixora philippinensis*, Philippines, PBS 25841, type (S); 27820, 27769; — On *I. coccinea*, Ceylon, Thwaites 479 p. p. (K, S); — On *I. ebracteolata*, Philippines, PBS 39252; — On *I.* sp., Philippines, Stevens 1089, 1097.

(1438) *Meliola psychotriae* Earle var. *chiococcae* Hansf., Sydowia 10: 83. 1957.

Cols. about 0.5 mm. diam., numerous and closely scattered, thin, becoming dense in centre, slightly velvety, amphigenous. Hyphae substraight to slightly undulate, cells mostly 15—20×7 μ, branching close, opposite, acute, becoming closely reticulate. Ch. alternate, antrorse, usually straight, 20—25 μ long; stc. cuneate, 5—10 μ long; hc. ovate, rounded to slightly pointed at apex, straight, 13—16×

8—10 μ. Mh. separate, opposite or alternate, ampulliform, 15—20× 7—9 μ. Ms. scattered and with shorter ones grouped around P., straight, simple, acute, to 600×9—11 μ. P. scattered or in small central group, verrucose, to 150 μ diam. Sp. oblong, to ellipsoid, obtuse, 4-septate, constricted, 34—39×15—18 μ.

On *Chiococca alba*, Barbados, Baker in IMI 13256 (type); Porto Rico, Stevens 9299, 7859, 7467, 7325, Whetzel 2636 (FLS, CUP).

(1439) *Meliola boninensis* Speg., Bol. Acad. Cienc. Corboda, **26**: 372. 1923.

Cols. amphigenous, dense, to 1 mm. diam., numerous and widely confluent. Hyphae sinuous, cells mostly 12—20×5—6 μ, branching opposite at wide angles, densely reticulate. Ch. alternate, spreading or subantrorse, 12—19 μ long; stc. cylindric, 3—6 μ long; hc. subglobose, ovate or 3—4-rounded-angulose, 9—13×7—11 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 12—18×7—8 μ. Ms. scattered, fairly numerous, straight, simple, subacute, to 330×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 27—33×13—14×11 μ.

On *Oldenlandia grayii*, Bonin Is., Wright 5 (K, F, SPEG, type).

The host was determined for the present author by the staff of the Royal Botanic Gardens, Kew.

(1440) *Meliola thalliformis* Deight. var. *naucleae* Deight., Sydowia 11: 113. 1958.

Cols. amphigenous, mostly hypophyllous, to 7 mm. diam., very dense, crustose, velvety, easily secedent, strongly parasitic with a dark brown spot showing on opposite side of leaf. Hyphae substraight, branching alternate or opposite, acute, densely radiating-parallel and forming a solid plate, cells mostly 11—20×8—10 μ. Ch. alternate or more scattered, closely antrorse, straight or bent, 22—32 μ long; stc. cuneate, 7—12 μ long; hc. oblong, ovate or irregularly angulose to rarely sublobate, 15—22×11—16 μ. Mh. separate, on sinuous hyphae growing out from centre over the mycelial plate, alternate, ampulliform, 16—20×7—9 μ. Ms. numerous, closely scattered, substraight or slightly arcuate to flexuous above, simple, acute, or subacute, to 320×8—9,5 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—48×13—15×12—13 μ.

On *Nauclea diderrichii*, Sierra Leone, Deighton 5192-a, type (IMI 53012), 2563.

The colonies are rather thinner than in the type, with some spaces in the thallus-membrane; the setae are commonly almost straight.

(1441) *Meliola erithalidis* (Cif.) Hansf., Proc. Linn. Soc. London **160**: 130. 1948.

= *Meliola kaduae* Stev. var. *erithalidis* Ciferri, Ann. Mycol. **29**: 288. 1931.

Cols. amphigenous, dense, to 1 mm. diam., smooth, scattered. Hyphae flexuous to substraight, cells mostly 20—25×6—7 μ, branching opposite or irregular at wide angles, closely reticulate, Ch. alternate, more or less antrorse, usually straight, 15—28 μ long; stc. cuneate to cylindric, 3—10 μ long; hc. ovate to cylindric, usually entire, rarely rounded-angulose, rounded at apex, 12—19×7—11 μ. Mh. mostly separate, ampulliform, 13—20×6—8 μ. Ms. scattered, straight or flexuous, not uncinate, simple, acute, to 400×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×13—15 μ.

On *Erithalis parviflora*, San Domingo, Ciferri, Mycofl. doming. 81, type, Ekman 3334; — On *E. fruticosa*, San Domingo, Ciferri 2792, Ekman 2797.

The following specimens differ from the above, mainly in their larger spores, 38—46×15—18 μ.

On *Erithalis fruticosa*, Porto Rico, Whetzel-Chardon 3288, Stevens 5125, 6082, 6254, 9240, 9229, Heller 6430 (FLS).

(1442) *Meliola anthospermi* Hansf., Proc. Linn. Soc. London **158**: 31. 1946.

Cols. epiphyllous, rarely amphigenous, 1 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 20—25×7—10 μ, branching opposite or irretular at acute to wide angles, loosely to subdensely reticulate. Ch. alternate, more or less antrorse, usually straight, 21—27 μ long; stc. cuneate, straight or bent, 5—10 μ long; hc. clavate, entire, apex broadly rounded or rarely slightly pointed, 13—18×10—14 μ. Mh. separate, ampulliform, mostly opposite, 15—20×7—8 μ. Ms. scattered, straight, simple, acute, to 420×9 μ. P. scattered, slightly verrucose, to 205 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 37—45×16—20×11—14 μ.

On *Anthospermum* sp., Congo Belge, Hendrickx 2518 (type), 2958.

(1443) *Meliola kibirae* Hansf. & Stev. var. *domingensis* Hansf., Sydowia **9**: 18. 1955.

Cols. epiphyllous, thin, to 2 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading, usually straight, 17—25 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to oblong, apex widely rounded or slightly pointed, entire, 11—16×9—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—22×7—9 μ. Ms. thinly scattered, straight, simple, acute when fully mature, to 550×7—9 μ. P. scattered, slightly verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—38×13—15×11—12 μ.

On *Guettarda pungens*, San Domingo, Ciferri, Mycofl. doming. exs. 43, type.

(1444) *Meliola gouldiae* Hansf., Sydowia 11: 56. 1958.

Cols. hypophyllous, to 8 mm. diam., thin. Hyphae substraight to undulate, branching opposite, acute, loosely radiating-reticulate cells mostly 40—50×5—6 μ. Ch. alternate or more scattered, antrorse straight or slightly bent, 15—22 μ long; stc. cuneate, 3—7 μ long; hc. ovate, entire or sometimes slightly angulose, rounded or somewhat pointed at apex 12—15×8—10 μ. Mh. mixed with a few ch. on separate hyphae with cells mostly 25 μ long; opposite or alternate, ampulliform, 14—19×6—7 μ. Ms. biform: (a) to 670×9—10 μ, scattered over colony, and around P. mixed with (b) to 300×6—7 μ, both types straight, simple, acute. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—36×10—11 μ.

On *Gouldia coriacea*, Hawaii, Stevens in USDA 71011 p.p. (F, type).

In the type collection this occurs mixed with the very different *M. sandwicensis* var. *gouldiae*.

(1445) *Meliola mussaendae-arcuatae* Hansf. var. **vangueriae** Hansf., var. n.

Cols. epiphyllous, dense, numerous and scattered, velvety, to 2 mm. diam. Hyphae substraight to sinuous or flexuous, cells mostly 15—25×7—9 μ, branching opposite, acute or wide, densely reticulate. Ch. somewhat antrorse, alternate or unilateral, usually straight, 16—21 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. subglobose or short and widely clavate, apex broadly rounded, 11—14×8—11 μ, entire. Mh. few, mixed with ch., alternate, conoid or ampulliform, 14—18×6—8 μ. Ms. scattered, straight, to 340×9—10 μ, apex subacute. P. scattered or in a loose central group, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—38×13—16 μ.

On *Vangueria apiculata*, Uganda, Hansford 3670, type.

(1446) *Meliola mitchellae* Cooke, Grevillea 6: 143. 1878.

Cols. amphigenous, thin to subdense, to 2 mm. diam. or confluent, slightly velvety. Hyphae undulate to sinuous, cells mostly 20—30×5—7 μ, branching usually opposite and acute, loosely to subdensely radiating-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 17—25 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. ovate, rounded to somewhat pointed at apex, entire, 11—18×7—11 μ. Mh. separate, opposite or mostly alternate, ampulliform, 15—23×7—9 μ. Ms. scattered and grouped around P., numerous, straight, simple, acute when fully mature, to 480×7—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×13—15×12 μ.

On *Mitchella repens*, USA, Ravenel, N. Amer. Fung. exs. 88, type, Ellis, N. Amer. Fungi 1294, Nash, Plants of Florida 2120,

Rabh., Fung. europ. 4455; no. 1614 (S. Carolina, ? Ravenel) in K; Earle 20279 (S, F, FLS).

The only major difference from *M. psychotriae* Earle is in the presence of mycelial setae with acute tips when fully mature, though the type of *M. mitchellae* shows very few such.

(1447) *Meliola amphigena* Stev. & Tehon, var. *tontaneae* Hansf., Sydowia 10:62. 1957.

Cols. amphigenous, to 4 mm. diam., thin and scarcely visible. Hyphae substraight to sinuous, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, spreading, straight or slightly bent, 15—20 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. globose, ovate or very slightly rounded-angulose, 10—15×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—8 μ. Ms. mostly grouped around P., straight or flexuous, gradually attenuate to acute or subacute apex, to 380×7—8 μ. P. scattered, slightly verrucose, to 140 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 27—35×11—13 μ.

On *Tontanea guianense*, Trinidad, Baker in IMI 139, 17876, 23463; — On *Warczewiczia coccinea*, Trinidad, Baker in IMI 19337; — On *Psychotria recurva*, San Domingo, Ciferri, Mycofl. doming. exs. 228 p. p.; — On *Rubiaceae* indet., Brazil, Rusby 430, 436 (BM); — On *Tontanea herbacea*, Porto Rico, Whetzel 2790, 3315 (CUP).

(1448) *Meliola kibirae* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 276. 1937.

Cols. epiphyllous and sometimes caulicolous, 1—3 mm. diam., thin, smooth. Hyphae straight, cells mostly 20—35×5—7 μ, branching opposite at acute angles, loosely reticulate. Ch. alternate, usually straight, spreading, 17—27 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. ovate, rounded or slightly pointed at apex, entire, 14—17×9—12 μ. Mh. separate, opposite, ampulliform, 12—15×7—8 μ. Ms. grouped around P., straight, simple, acute, to 240×8—9 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 30—35×12—14 μ.

On *Rubiaceae* indet., Uganda, Hansford 1475, type.

(1449) *Meliola bayamonensis* Tehon, Bot. Gaz. **67**: 506. 1919.
= *Irenopsis bayamonensis* (Tehon) Stev., Ann. Mycol. **25**: 437. 1927.

Cols. hypophyllous, to 5 mm. diam., very thin, smooth. Hyphae slightly undulate, branching opposite or irregular at acute to wide angles, loosely radiating-reticulate, cells mostly 30—50×5—7 μ. Ch. alternate or more scattered, somewhat antrorse, straight or bent, 15—23 μ long; stc. cuneate, 3—8 μ long; hc. cubglobose to ovate, entire, 11—16×9—11 μ. Mh. mixed with ch., alternate, ampulliform, 15—18×6—8 μ. Ms. thinly scattered and grouped around P., straight,

simple, attenuate to subacute apex, to 330×7 μ. P. scattered, globose, slightly verrucose, glabrous, to 135 μ diam. Sp. cylindric to narrowly ellipsoid, obtuse, 4-septate, slightly constricted, 30—37×9—11 μ.

On *Psychotria pubescens*, Porto Rico, Stevens 392, type (FLS).

(1450) *Meliola palawanensis* Syd., Leafl. Philipp. Bot. 5: 1539. 1912.

Cols. amphigenous, to 4 mm. diam. or confluent, dense. Hyphae crooked, cells mostly 20—25×6—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 15—26 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose to angulose or rarely 2—3-lobate, 12—19×10—16 μ. Mh. separate, mostly alternate, ampulliform, 14—20×7—9 μ. Ms. scattered, straight, simple, acute, to 260×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—39×12—13×10—11 μ.

On *Morinda bartlingii*, Philippines, PBS 13040, type (S).

(1451) *Meliola obtusa* (Toro) Orejuela, Mycologia **37**: 389. 1945.
= *Irenina obtusa* Toro, in Chardon & Toro, Journ. Dept. Agr. Porto Rico **14**: 236. 1930.

Cols. amphigenous, subdense, to 2 mm. diam. Hyphae undulate, branching alternate, closely reticulate, cells 16—20×5—6 μ .Ch. alternate, piriform; stc. 3 μ long; hc. straight, round, 7 μ wide. Mh. rare. Ms. scattered and grouped around P., simple, straight, to 150 μ long. P. verrucose, to 300 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—39×12—15 μ.

On *Tontanea canescens*, Colombia, Toro 221, type; Garces et al. 1661.

Material of this species has not been available to the present author.

Host Family 233. Caprifoliaceae.

Synopsis of accepted species of Meliolineae:

Asteridiella

3101.4330	Cols. dense; hyphae sinuous; hc. large, entire to lobate	*viburni*	(1452)
3101.4220	Cols. thin; hyphae undulate; hc. large, entire or rarely irregular	*ebuli*	(1453)
3101.4220	Cols. thin; hyphae undulate; hc. small, angulose to sublobate	*lonicerae*	(1454)

Meliola

3112.5222	Cols. subdense, velvety; hyphae sinuous; hc. cylindric or sinuous-angulose	*viburnicola*	(1455)
3111.4231	Cols. thin; hyphae substraight to undulate; hc. subglobose to subangulose; ms. obtuse, slightly arcuate near apex	*aequatoriensis*	(1456)
3111.3221	Cols. thin; hyphae crooked; hc. subglobose, usually entire; ms. acute, straight	*sambuci*	(1457)

(1452) *Asteridiella viburni* (Syd.) Hansf., Sydowia 10: 51. 1957.
= *Meliola viburni* Syd., Ann. Mycol. **15**: 193. 1917.
= *Irenina viburni* (Syd.) Stev.. l. c., **25**: 457. 1927.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae sinuous to flexuous, cells mostly 30—40×9—10 μ, branching irregular, acute to wide, densely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 22—31 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. cylindric, piriform, straight or bent, entire or somewhat rounded-angulose to sublobate, 18—23×12—16 μ. Mh. separate, opposite or alternate, ampulliform, 16—21×7—9 μ. P. scattered, to 260 μ diam., verrucose. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 42—48×17—21×13—16 μ.

On *Viburnum odoratissimum*, Philippines, PBS 25156, type; — On *V. luzonicum* var. *formosanum*, Formosa, Yamamoto; — On *V. propinquum*, Formosa, Yamamoto.

In one or two colonies seen were one or more mycelial setae, straight, up to 250×6—8 μ, simple, acute; all other colonies were devoid of setae. As the latter appears to be the normal condition, it is thought best to include this species under *Asteridiella*, rather than under *Meliola*.

(1453) *Asteridiella ebuli* (Yamam.) Hansf., Sydowia **10**: 47. 1957.
= *Irenina ebuli* Yamam., Trans. Nat. His. Soc. Formosa, **31**: 16. 1941.

Cols. amphigenous, to 1 mm. diam., thin, arachnoid. Hyphae undulate to flexuous, cells mostly 25—40×6—8 μ, branching opposite or irregular at varying angles, loosely reticulate. Ch. alternate, irregularly bent, 20—60 μ long; stc. cylindric, 5—40 μ long; hc. ovate to clavate and entire, or variously rounded-angulose or shallowly sublobate, 14—30×10—18 μ, versiform. Mh. separate, opposite or alternate, ampulliform, 15—25×6—9 μ. P. in close central group, verrucose, to 190 μ diam., surface cells rounded to conoid, projecting up to about 10 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 37—48×15—18×12—14 μ.

On *Ebulus formosana*, Formosa, Yamamoto, type; — On *Sambucus javanica*, Java, BO 13095 p. p.

(1454) *Asteridiella lonicerae* (Yamam.) Hansf., Sydowia **10**: 48. 1957.

(3101.4220)

= *Irenina lonicerae* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 221. 1941.
= *Irenina lonicerae* Hansf., Farlowia **3**: 272. 1948.

Cols. amphigenous, to 2 mm. diam. or numerous and confluent, thin. Hyphae substraight to undulate, cells mostly 20—35×7—9 μ, branching opposite or irregular, acute, loosely to rather closely reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent,

17—24 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. subglobose, clavate or usually rounded-angulose to sublobate, 12—17×9—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—25×7—9 μ. P. in cenral group, to 190 μ diam., surface cells obtusely conoid to mammillate, about 40 μ diam., and to 25 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—46×15—19×14—15 μ.

On *Lonicera japonica*, Formosa, Yamamoto, type; — On *L.* sp., China, Cheo 605 (F).

(1455) *Meliola viburnicola* Hansf., Sydowia 9:25. 1955.

Cols. amphigenous, rather dense, shortly velvety, to 5 mm. diam. or confluent. Hyphae substraight to sinuous, cells mostly 20—30×5—6 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. opposite, spreading, straight or bent, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. cylindric with rounded apex, straight and entire or slightly sinuous-angulose, 10—13×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—20×6—9 μ. Ms. few to numerous, more or less straight, simple, acute, to 400×7—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 44—51×16—19 μ, the middle cell often larger than the others.

On the lower surface the mycelium is much more crooked, with many alternate hypopodia, more variable in size and shape, more angulose.

On *Viburnum odoratissimum*, Philippines, PBS 4960, type (K).

(1456) *Meliola aequatoriensis* Petrak, Sydowia 2: 339. 1948.

Cols. epiphyllous, rarely amphigenous, to 5 mm. diam. or sometimes confluent, thin. Hyphae substraight to undulate, cells mostly 25—50×7—8 μ, branching alternate or irregular, rarely opposite, at wide angles, loosely reticulate. Ch. alternate or more scattered, more or less antrorse, usually straight, 20—25 μ long; stc. cylindric to cuneate, 6—10 μ long; hc. globose to wide ovate, entire or slightly rounded-angulose, 12—18×11—16 μ. Mh. separate, opposite or alternate, ampulliform, 23—28×7—10 μ, neck elongate. Ms. few to fairly numerous, mostly around P., straight or slightly arcuate near apex, not uncinate, simple, obtuse, to 230×10 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted 38—45×16—18×12—15 μ.

On *Viburnum tinoides*, Ecuador, Sydow 583, type; — On *V. sambucinum*, Malaya, Cherewick 1107 (= IMI 54909).

(1457) *Meliola sambuci* Hansf., Reinwardtia 3: 79. 1954.

Cols. hypophyllous along the main leaf-veins, causing some distortion of leaf, to 4×1—2 mm., thin, thinly velvety. Hyphae sinuous to crooked, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, much

less than 1% opposite), usually bent, spreading, 16—20 μ long; stc. cylindric, 3—5 μ long; hc. subglobose to wide ovate, usually bent, entire, 12—16×8—13 μ. Mh. separate, opposite or alternate, ampulliform, 15—20×6—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 360×8—10 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 28—34×13—14×10 μ.

On *Sambucus javanicus*, Java, BO 13095 p. p., type.

Host Family 235. Valerianaceae.

(1458) *Asteridiella valerianae* Hansf., Sydowia **10**: 61. 1957.

Cols. epiphyllous, thin to dense, to 2 mm. diam., smooth. Hyphae undulate to sinuous or tortuous, cells mostly 15—25×6—7 μ, branching opposite or irregular at wide angles, becoming closely reticulate. Ch. alternate, subantrorse, straight or bent, 15—20 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. irregularly subglobose, angulose to sublobate, rarely sbentire, 11—15×9—14 μ. Mh. mixed with ch., opposite or altenate, ampulliform, 12—17×7—9 μ. P. scattered, verrucose, to 180 μ diam., surface cells obtusely conoid, to 15 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×13—15 μ.

On *Valerianoides cayennense*, Porto Rico, Whetzel-Kern-Toro 2515, type (CUP); — On *V. jamaicensis*, Venezuela, Kern & Toro 1763 (CUP).

Host Family 238. Compositae.

Synopsis of accepted species of Meliolineae:

Appendiculella

3201.4230	Cols. subdense; hyphae crooked; hc. oblong to irregular or lobate; app. 1—6, obtuse, often bent to hamate, to 90×20μ	*sororcula*	(1459)
3201.4220	Cols. subdense; hyphae substraight to undulate; hc. cylindric-piriform or lobate; app. 2—6, to 50×20μ	*sororcula* var. *portoricensis*	(1460)
3201.3220	Cols. thin; hyphae undulate; hc. globose, entire; app. 0—4, to 60×10—15μ	*vernoniae*	(1461)

Irenopsis

3¾01.5330	Cols. subdense; hyphae substraight; hc. large, globose-ovate; ps. 4—8, obtuse, to 200μ long.	*piptocarphae*	(1462)
3301.4230	Cols. dense; hyphae tortuous; hc. oblong to subglobose, entire; ps. 2—9, curved to uncinate, obtuse, to 65μ long	*senecionis*	(1462a)
3301.4220	Cols. thin; hyphae crooked; hc. large, ovate, piriform or angulose; ps. 3—6, uncinate to coiled, asperate, to 110μ	*mikaniae*	(1463)

Asteridiella

2101.4220	Cols. thin; hyphopodia sessile; globose to hemispheric, entire	*abnormis*	(1464)

3101.5340	Cols. thin; hyphae undulate to crooked; hc. ovate-clavate, entire	*negeri*	(1465)
3101.5330	Cols. subdense; hyphae undulate to sinuous; hc. subglobose-piriform, entire	*tomentosa*	(1466)
3101.4220	Cols. dense; hyphae substraight to undulate; hc. globose-piriform, entire	*cyclopoda*	(1467)

Meliola

3141.5331	Cols. dense, velvety; hyphae undulate; hc. subglobose-clavate, crenate to subglobate; ms. 3-dichotomous	*mikaniae*	(1468)
3113.6332	Cols. thin; hyphae crooked; hc. small, globose-ovate, entire; sp. ellipsoid	*spegazziniana*	(1469)
3113.4232	Cols. dense; hyphae substraight; hc. ovate-piriform, entire; ms. obtuse; sp. oblong	*olearíae*	(1470)
3111.3223	Cols. subdense; hyphae sinuous to crooked; hc. small, subglobose, entire; ms. obtuse to acute; sp. oblong	*angustispora*	(1471)
3111.3221	Cols. thin; hyphae crooked; hc. globose, entire; ms. obtuse; sp. oblong	*elephantopi*	(1472)
3111.3221	Cols. subdense, minute; hyphae undulate to sinuous; hc. ovate, entire; ms. obtuse to subacute; sp. oblong	*gymnoloniae*	(1473)

Doubtful species:

Meliola cyclopoda Stev. var. *neurolaenae* Cif. (1474)

(1459) **Appendiculella sororcula** (Speg.) Hansf., comb. n.

= *Meliola sororcula* Speg., Bol. Acad. Nac. Cienc. Cordoba, **11**: 230. 1889.

= *Irene sororcula* (Speg.) Stev., Ann. Mycol. **25**: 423. 1927.

= *Meliola compositarum* Earle, Bull. New York Bot. Gard., **3**: 306. 1905.

= *Appendiculella compositarum* (Earle) Toro, Mycologia **17**: 144. 1925.

Cols. amphigenous, subdense, to 2 mm. diam. or numerous and confluent. Hyphae substraight to crooked, cells mostly 20—30 × 6—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, straight or irregularly bent, spreading, 25—35 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. subglobose to ovate or cylindric, entire or irregularly angulose to sublobate, often bent, 18—25 × 9—17 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—23 × 8—10 μ. P. scattered, verrucose, to 210 μ diam.; app. 1—6, suberect, straight or uncinate at apex, thin-walled, translucent light brown, continuous, transversely striate, to 90 μ long and about 20 μ thick at the base, attenuate to about 10 μ at the darker apex. Sp. oblong to subellipsoid, obtuse 4-septate, constricted, 39—45 × 15—17 μ.

On *Baccharis pingraea*, Brazil, Puiggari 2774, type (P, FLS, SPEG); — On *Eupatorium odoratum*, Porto Rico, Stevens 8055,

3898, 4953, 3121, 3241, 3898, 4185, 4683, 4661, 4931, 3771, 7689, 6561, 7695, 6574, 6830, 83, 8466, 8158, 8798, 9168, 7325, 7977, 8055, 6056, 7309, 8537, 6801, 6031, 9306, 6861, 6866, 6003, 7953, 6032, Fink 196 (F); Venezuela, *Sydow*, Fung. exot. exs. 793; San Domingo, Ciferri, Mycofl. doming. exs. 150, Petrak, Mycoth. gener. 1231; — On *E. oerstedianum*, Costa Rica, Sydow, Fung. costaric. 191; — On *E. portoricense*, Porto Rico. Stevens 6034, 4301; — On *E. dolicholepis*, Porto Rico, Stevens 7893; — On *E. conyzoides*, Porto Rico, Heller 6185; — On *E. morifolia*, Honduras, Standley 55520, 53241 (F); — On *E.* spp., Ecuador, Stevens 319, 183; Costa Rica, Stevens 684; Panama, Stevens 1044; Jamaica, Hansford 808; British Guiana, Stevens 261, 449; — On *Mikania micrantha*, Honduras, Standley 55513; — On *M. scandens*, San Domingo, Ekman 3216; — On *M.* sp., Jamaica, Hansford 813; British Guiana, Stevens 431; Ecuador, Stevens 73; Trinidad, ICTA 1801; — On *Liabum* sp., Ecuador, Stevens 139, 53, 166, 323; — On *Schistocarpha* sp., Ecuador, Stevens 143; — On *Calea pittieri*, Panama, Stevens 200, 893, 1155; Costa Rica, Stevens 326; — On *Willoughbaea cordifolia*, Porto Rico, Heller 6385; — On *Calea solidaginea*, Trinidad, ICTA 1102, 1376; — On *Eupatorium inulaefolium*, Trinidad, ICTA 276; — On *E. iresinoides*, Venezuela, Chardon 1282 (CUP); — On *Compositae* indet., Cuba, Wright 413 (K); Costa Rica, Stevens 819; Brazil, Ule, Herb. brasil. 83, Rabh.-Wint., Fung. europ. 3543.

On unknown host (? *Compositae*), Brazil, Ule, Herb. brasil. 2947 (K, PRET) has the hc. all entire, globose to wide ovate, 14—20× 11—14 μ.

(1460) *Appendiculella sororcula* (Speg.) Hansf., var. **portoricensis** (Stev.) Hansf., comb. n.

= *Meliola compositarum* Earle var. *portoricensis* Stev., Illinois Biol. Monogr. **2**: 22. 1916.

= *Irene sororcula* (Speg.) Stev. var. *portoricensis* Stev., Ann. Mycol. **25**: 425. 1927.

Cols. epiphyllous, to 2 mm. diam., subdense. Hyphae substraight to undulate, cells mostly 20—30×7—8 μ, branching usually opposite at wide angles, rather closely reticulate. Ch. alternate, spreading or androrse, straight or bent. 18—27 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. cylindric to piriform, entire or more usually irregularly lobate or angulose, straight or variously bent, versiform, 13—20× 9—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—20×6—9 μ. P. scattered, verrucose, to 200 μ diam.; app. 2—6, erect-spreading, pale brownish, thin-walled, contionuus, obtusely unicate, transversely striate, to 50×20 μ, the surface closely dark-granulose. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—46×18—20 μ.

On *Eupatorium portoricense*, Porto Rico, Stevens 7320, 8102,

6001, 4301 (type), 1551, 4301 (type), 1551, 322, 7723 (CUP, FLS); Stevens 5192, with ch. 1—2% opposite.

(1461) *Appendiculella vernoniae* (Stev.) Hansf., Sydowia **9**: 31. 1955.
= *Irene sororcula* (Speg.) Stev. var. *vernoniae* Stev., Ann. Mycol. **25**: 424. 1927.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae substraight to undulate, cells mostly 20—30×5—7 μ, branching opposite or irregular, acute, loosely radiating-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. globose, entire, 10—12 μ diam. Mh. mixed with ch., opposite or alternate, bent ampulliform, 12—15×7—8 μ. P. scattered, verrucose, to 150 μ diam.; app. 0—4, erect-spreading, straight or uncinate, thin-walled, nearly smooth, pale clear brownish, continuous, obtuse and slightly swollen at apex, to 60×10—15 μ, apex pale. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 31—36×13—15×10—12 μ.

On *Vernonia* sp., Panama, Stevens 1132 (type), 308, 465, 1171, 1319, 1047; Costa Rica, Stevens 706. (FLS, F).

(1462) *Irenopsis piptocarphae* Hansf., Sydowia **10**: 45. 1957.

Cols. small, to 1 mm. diam., subdense. Hyphae substraight, cells mostly 25—30×9—11 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate or unilateral, more or less antrorse, 25—33 μ long; stc. cylindric to cuneate, 8—14 μ long; hc. globose to broadly ovate, entire, 16—20×14—18 μ. Mh. mixed with ch., opposite or alternate, ampulliform. P. scattered or 2—3 in central group, verrucose, to 240 μ diam.; ps. 4—8, straight or irregularly bent, sometimes uncinate, simple, obtuse, 2—3-septate, dark brown, smooth, to 200×8—10 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 48—56×19—22 μ.

On *Piptocarpha axillaris*, Brazil, Inst. Biol. S. Paulo 2981, type.

(1462-a) **Irenopsis senecionis** Hansf., sp. n.

Plagulae amphigenae, praecipue hypophyllae, densae, leves, usque ad 2 mm. diam. vel confluentes. Hyphae brunneae, tortuosae, opposite vel irregulariter, acute vel late ramosae, dense intertexto-reticulatae, cellulis plerumque 20—34×6—10 μ. Hyphopodia capitata alternata, antrorsa vel patentia, recta vel curvata, 18—27 μ long; cellula basali cuneata vel cylindracea, 3—11 μ longa; cellula apicali subglobosa, ovata vel oblonga, integra, saepe curvata, 13—17×10—13 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15—20×6—8μ. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 210 μ diam.; setae peritheciales 2—9, erecto-patentes, deorsum rectae, apice curvatae vel uncinatae, obtusae, atrobrunneae, continuae, usque ad 65×9 μ; paries 2—3 μ cr., sursum tenuiter asperatus. Sporae atrobrunneae, oblongae, obtusae, 4-septate, constrictae, 41—49×17—18×13—14 μ.

Hab. in foliis *Senecionis* spec., Banos, Ecuador, Lagerheim in Herb. Patouillard (F).

(1463) *Irenopsis mikaniae* Hansf. & Deight., Mycol. Paper, IMI **23**: 64. 1948.

Cols. epiphyllous, thin, to 1 mm. diam. or numerous and confluent. Hyphae sinuous to crooked, cells mostly 20—30×5—7 μ, branching opposite or irregular, accut, loosely reticulate. Ch. alternate, spreading, straight or bent, 20—35 μ long; stc. cylindric to cuneate, 5—10 μ long ovate, piriform or angulose to irregular, versiform, straight or bent, 15—25×8—15 μ. Mh. mixed with ch., few, to numerous, opposite or alternate, ampulliform. P. scattered, each on a loosely radiate subiculum, verrucose, to 140 μ diam., surface cells rounded to obtusely conoid, to 10 μ high; ps. 3—6, erect, black, uncinate to coiled above, asperate, thick-walled, obtuse, simple, continuous, to 110×8—9 μ. Sp. cylindric, obtuse, 4-septate, constricted, 37—42×13—14 μ.

On *Mikania scandens*, Sierra Leone, Deighton 1207, type.

Meliola bismikaniae Cif., Mycopathologia **7**: 89, 1954, is possibly the same as the above, but no specimens have been available to the author for comparison.

(1464) *Asteridiella abnormis* (Theiss.) Hansf., Sydowia **10**: 46. 1957.

= *Meliola pulchella* Speg. var. *abnormis* Theiss., Broteria **9**: 23. 1910.

= *Irenina abnormis* (Theiss) Stev., Ann. Mycol. **25**: 447. 1927.

Cols. epiphyllous, effuse and confluent, strongly adherent. Hyphae sinuous, interwoven, branching alternate or irregular, cells narrow and elongate. Ch. alternate or often unilateral, globose to hemispheric, sessile, pellucid yellow-brown, 7—10 μ diam., entire. Ms. none. P. globose, slightly verrucose, to 200 μ diam. Asci 2—3-spored. Sp. usually slightly bent, 3-septate, not or slightly constricted, 40—50× 15—19 μ, the end cells slightly smaller, rounded, not conoid.

On ? *Baccharis* sp., Brazil, Theissen.

Specimens have not been traced by the present author; Theissen noted that the type was heavily infected by "*Dimerosporium*" which he considered might be responsible for the absence of setae. The species must be considered as doubtful, in view of the description of the hyphopodia and mycelium; these could belong to either *Clypeolella* or *Schiffnerula*, though the spores described seem to belong to the Meliolineae. It is probable that more than one fungus was present, and that they have been confused in the original description.

(1465) *Asteridiella negeri* Hansf., Sydowia 10: 49. 1957.

= *Irenina negeri* Hansf., Proc. Linn. Soc. London **165**: 168. 1955.

Cols. mostly epiphyllous, to 1 mm. diam. or confluent, thin.

Hyphae undulate to crooked, cells mostly 20—35×8—10 μ, branching usually opposite, acute, loosely reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 20—31 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. subglobose to ovate or clavate, entire, 13—22×10—14 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform. P. scattered, verrucose, to 320 μ diam.; surface cells conoid, obtuse, often bent, to 30 μ high and about 40 μ diam. at base. Sp. oblong, obtuse, 4-septate, constricted, 48—54×18—21 μ.

On *Compositae* indet., Chile, Neger, Plant. chil. 114, type (S). — On *Baccharis* sp., Chile, Thaxter 7413 (F).

(1466) **Asteridiella tomentosa** (Wint.) Hansf., comb. nov.

= *Meliola tomentosa* Wint., Rev. Mycol. **7**: 206. 1885.

= *Irene tomentosa* (Wint.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

= *Irenina tomentosa* (Wint.) Stev., l. c. **25**: 462. 1927.

Cols. amphigenous, dense to rather thin, smooth, 2—5 mm. diam. Hyphae undulate to sinuous, cells mostly 25—40×8—9 μ, branching alternate or opposite, acute, loosely to closely reticulate. Ch. alternate, straight or antrorse-bent, 23—33 μ long; stc. cylindric, 5—13 μ long; hc. subglobose to piriform, entire, 17—23×13—18 μ; some hyphopodia with very elongate stc. Mh. separate, opposite or alternate, ampulliform. P. loosely scattered, verrucose, to 250 μ diam., surface cells obtusely conoid to rounded, projecting to 15 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 52—58×20—26 μ.

On ? *Compositae* indet., Paraguay, Balansa, type (S).

(1467) *Asteridiella cyclopoda* (Stev.) Hansf., Sydowia **10**: 47. 1957.

= *Meliola cyclopoda* Stev., Illinois Biol. Monogr. **2**: 16. 1916.

= *Irene cyclopoda* (Stev.) Toro, Mycologia **17**: 140. 1925.

= *Irenina cyclopoda* Stev., Ann. Mycol. **25**: 452. 1927.

Cols. epiphyllous, to 5 mm. diam., dense. Hyphae substraight to undulate, cells mostly 25—30×6—8 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, usually straight, 13—20 μ long; hc. globose to widely piriform, entire, 11—15×10—14 μ. Mh. mixed with ch., usually opposite, ampulliform, 12—16×7—9 μ. P. scattered, globose, verrucose, to 170 μ diam., surface cells conoid to nammilate, to 25 μ high by 30—40 μ diam. at the base. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 35—43×13—15 μ.

On *Pseudelephantopus spicatus*, Porto Rico Stevens 7871, type, 7733; — On *Vernonia* sp., Uganda, Hansford 985, 3503; Gold Coast, Hughes in IMI 44540; — On *Mikania scandens*, Uganda, Hansford 3368; — On *Wedelia oblonga*, Uganda, Hansford 750, 1336; — On *Elephantopus mollis*, Venezuela, Sydow, Fung. venez. 184-a; — On *E.* sp., British Guiana, Stevens 575; — On *Aspilia latifolia*, Sierra Leone, Deighton 1976, 1657, 1504; Gold Coast, Hughes in IMI

36864, 36867, 36866, 36869; — On *Microglossa afzelii*, Sierra Leone, Deighton 1525; Uganda, Hansford 2294, 3437, 3460; — On *M. volubilis*, Sierra Leone, Deighton 556, 1222, 1861; Gold Coast, Hughes in IMI 44546; Uganda, Hansford 3525, 3627; — On *Melanthera brownii*, Gold Coast, Deighton CB 903, 934, Hughes in IMI 37137, 37138, 37139, 37140; Sierra Leone, Deighton 948; — On *Bidens squarrosa*, Venezuela, Sydow, Fung. exot. exs. 626; — On *Compositae* indet., Uganda, Hansford 1328, 1944, 1762, 2636, 2635, 2502.

(1468) *Meliola mikaniae* Gaill., Bull. Soc. Myc. Fr. 8: 187. 1892.

Cols. epiphyllous, to 5 mm. diam., dense, velvety. Hyphae undulate, branching alternate or irregular, acute, closely reticulate, cells mostly 20—35 × 6—9 µ. Ch. alternate, antrorse or spreading, straight or bent, 24—37 µ long; stc. cylindric to cuneate, 6—17 µ long; hc. subglobose to widely clavate, margin crenate to sublobate, often bent, versiform, 15—25 / 15—20 µ. Mh. separate, opposite, alternate or rarely ternate, ampulliform, 18—35 / 7—9 µ. Ms. numerous, scattered and grouped around P., to 290 µ high, the main axis 9—13 µ thick, widely 3-dichotomous above, br. 1-ry to 100 µ, 2-ry to 80 µ, 3-ry to 40 µ and usually 2-dentate to 10 µ, tips acute. P. scattered or subaggregate, verrucose, to 240 µ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—52 / 18—22 / 13—17 µ.

On *Mikania* sp., Ecuador, Lagerheim in Herb. Patrouillard (F), type; — On indet. *Compositae*, Jamaica, Thaxter 7216, 7219, 7227, 7431 (F).

(1469) *Meliola spegazziniana* Wint., Anal. Soc. Cient. Argentina, **26**: 64. 1888.

Cols. amphigenous, mostly hypophyllous, confluent over the leaf, with only the perithecia showing. Hyphae penetrating the leaf tomentum, very crooked, cells 15—30 / 3—7 µ, branching opposite or irregular, closely reticulate with rounded meshes. Ch. mostly opposite, some alternate, usually irregularly bent, 12—16 µ long; stc. cylindric, 3—6 µ long; hc. globose to ovate, sometimes rounded-angulose, 8—11 / 5—8 µ. Mh. mixed with ch., opposite or alternate, ampulliform, to conoid, 12—15 × 6—8 µ. Ms. scattered, straight or flexuous, not uncinate, simple, obtuse, to 450 / 7—9 µ. P. scattered, verrucose, to 250 µ diam. Sp. ellipsoid to subfusoid, ends attenuate-rounded, obtuse, 4-septate, slightly constricted, 53—65 / 22—25 µ, the central cell distinctly the largest. The ch. are often formed behind the septum of the parent cell and not exactly opposite; epiphyllous colonies have straighter hyphae.

On *Compositae* indet., Paraguay, Balansa 3751, type (K, P, SPEG); Roum., Fung. sel. gall. 4131, leg. Balansa; ditto, 5238 (part of type coll.); Brazil, Schoffer in Herb. Hochnel (F); — On *Moquinia polymorpha*, Brazil, Ule, Herb. brasil. 1444 (S).

(1470) *Meliola oleariae* Hansf., Proc. Linn. Soc. London 157: 179. 1946.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae substraight to slightly flexuous, cells mostly 12—20×6—9 μ, branching opposite or irregular, acute, densely reticulate and almost solid. Ch. opposite or irregularly alternate, antrorse, straight or slightly bent, 18—25 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. ovate to oblong-clavate, entire, 14—18×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×8—10 μ, usually few. Ms. few, scattered, straight, simple, obtuse, to 400×9—10 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×14—16 μ.

On *Olearia argophylla*, Tasmania, Rodway 834, type (TASM, PRET).

(1471) *Meliola angustispora* Stev., Ann. Mycol. 26: 264. 1928.

Cols. amphigenous, subdense, to 5 mm. diam. Hyphae sinuous to crooked, cells mostly 15—30×5—7 μ, branching opposite or irregular acute or wide, becoming closely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 13—17 μ long; stc. cylindric, 2—5 μ long; hc. globose to ovate, entire, 10—13×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—24×6—8 μ. Ms. scattered, with shorter ones (—250 μ) grouped around P., straight, simple, obtuse to acute, to 630×9—11 μ. P. scattered, nearly smooth, to 120 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—43×11—13 μ.

On *Baccharis rhexioides*, Panama, Stevens 344, type (FLS, F).

(1472) *Meliola elephantopi* Hansf., Sydowia 11: 55. 1958.

Cols. amphigenous, thin, to 2 mm. diam. Hyphae crooked, branching opposite or irregular, acute, loosely interwoven- reticulate, cells mostly 20—30×6 μ. Ch. alternate, spreading or antrorse, often bent, 13—18 μ long; stc. cuneate, 2—6 μ long; hc. globose, entire, 10—13×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. few, mostly around P., straight or flexuous, simple, obtuse, to 200×6—7 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 26—33×10—12 μ.

On *Elephantopus* sp., Philippines, Stevens 1732, type (FLS).

(1473) *Meliola gymnoloniae* Toro, in Cardon & Toro, Monogr. Univ. Porto Rico, B: 2: 120. 1934.

Cols. amphigenous, minute, punctiform, 0,5 mm. diam., subdense. Hyphae undulate to sinuous, cells mostly 20—30×6—7 μ, branching opposite or irregular, acute or wide, closely radiating-reticulate. Ch. alternate, antrorse, straight or bent, 18—25 μ long; stc. cuneate, 4—9 μ long; hc. ovate, entire, 13—18×10—13 μ. Mh. few, separate, alternate or opposite, ampulliform, 13—16×7—8 μ. Ms. scattered and grouped around P., substraight to flexuous, not uncinate, simple,

obtuse to subacute, to 280×7—9 μ. P. in loose central group, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—34× 12—13 μ.

On *Gymnolonia patens*, Venezuela, Chardon & Toro 447, type (CUP).

(1474) *Meliola cyclopoda* Stev. var. *neurolaenae* Ciferri, Mycopathologia **7**: 119. 1954.

"Differs from type: Ch. directly inserted on hyphae, without basal cell. P. 80—100 μ diam.; sp. 40—45×18—21 μ."

On *Neurolaena lobata*, San Domingo. Ekman 3020.

The mycelium here obviously belongs to either *Schiffnerula* or *Clypeolella*, and the spores described do not belong to the mycelium. This "variety" should be deleted, unless examination of the type, not available to the present writer, shows that these spores produce a true Melioline mycelium on this host.

Host Family 239. Genianaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3112.4332	Cols. dense, subcrustose; hyphae straight; hc. globose-ellipsoid, entire; ms. acute to subacute	*lisianthicola*	(1475)
3111.3232	Cols. thin to subdense; hyphae undulate to sinuous; hc. subglobose to avote or angulose;	*chelonanthi*	(1476)
3111.3222	Cols. dense, subcrustose; hyphae crooked; hc. ovoid, entire; ms. acute to obtuse	*lisianthi* var. *bisgoepperiae*	(1477)
3111.2121	Cols. dense. subvelvety; hyphae substraight to undulate; hc. globose-piriform, entire; ms. obtuse to clavulate	*lisianthi*	(1478)

(1475) *Meliola lisianthicola* Hansf., Sydowia **10**: 77. 1957.

Cols. mostly epiphyllous, to 2 mm. diam., dense, subcrustose, sometimes velvety. Hyphae straight, branching opposite, acute, densely reticulate and solid in centre, cells mostly 10—18×6—8 μ, Ch. opposite save where too crowded, antrorse, straight or slightly bent, 12—19 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to ellipsoid, entire. 10—13×7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18×7—8 μ. Ms. scattered, straight, simple, acute or subacute, to 360×8—9 μ. P. in central group, verrucose, to 220 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 39—47×20—24 μ.

On *Lisianthus laxiflorus*, Porto Rico, Whetzel 3325, type (CUP).

(1476) *Meliola chelonanthi* Hansf., Sydowia Beih. **1**: 104. 1957.

Cols. amphigenous, on upper surface to 3 mm. diam., on lower surface larger and often confluent, thin to subdense. Hyphae undulate

to sinuous, branching opposite or irregular at wide angles, loosely reticulate with rounded meshes, cells mostly 20—35×6—8 μ, becoming more closely reticulate-interwoven in old colonies. Ch. alternate, spreading or antrorse, often bent, 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose to ovate, usually somewhat rounded-angulose, 10—16×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 14—25×7—9 μ, neck sometimes elongate. Ms. fairly numerous, scattered and grouped around P., straight or somewhat arcuate above, not uncinate, simple, gradually attenuate to acute apex, often slightly torulose below apex, to 440×6—8 μ. P. scattered, verrucose, to 215 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×14—16 μ.

On *Chelonanthus acutangulus*, Costa Rica, Stevens 246, type (FLS, F); — On *Gentianaceae* indet., Costa Rica, Stevens 279.

(1477) *Meliola lisianthi* Stev. & Tehon var. *bisgoeppertiae* Cif., Mycopathologia **7**: 146. 1954.

"Differs from type: Ms. acute or obtuse, very rarely subdentate, 300—450 μ long; ch. opposite, rarely unilateral, very rarely alternate, very crowded and numerous, uniform; hc. elliptic to ovoid, 9—12×7—9 μ, stc. 2,5—4 μ long; P. 180—200 μ diam.; sp. 32—35×15—17 μ."

"Cols. very dense, subcrustose, to 2 mm. diam.; hyphae dense, crooked, closely septate, branching opposite at wide angles".

On *Bisgoeppertia scandens*, San Domingo, Ekman 4219 (not seen by present author).

(1478) *Meliola lisianthi* Stev. & Tehon, Mycologia **18**: 15. 1926.

Cols. epiphyllous, subvelvety, dense, to 3 mm. diam. or widely confluent. Hyphae substraight to undulate, cells mostly 20—30×6 μ, branching opposite at acute or wide angles, loosely to closely reticulate and interwoven. Ch. alternate, spreading or antrorse, usually straight, 10—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to piriform, entire, 7—11×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. closely scattered and grouped around P., straight, simple, clavulate to obtuse, to 180×6—7 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 23—29×8—10×8 μ.

On *Lisianthus grandiflorus*, British Guiana, Stevens 316, type; — On *L. chelonoides*, Trinidad, Wakefield 214 (K), Baker in IMI 27682, 23471, 21292, Stevens 916, Linder s. n. (F), Thaxter 7553 (F); — On *Lisianthus* sp., Trinidad, Stevens 848 (FLS).

Most collections differ from the type in that few or no setae are clavulate-swollen at the apex.

Host Family 241. Plumbaginaceae.

(1479) *Meliola plumbaginis* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 280. 1937.

Cols. amphigenous and caulicolous, to 2 mm. diam., dense, velvety, often numerous and widely confluent. Hyphae substraight, cells mostly 15—25×7—9 μ, branching opposite or irregular, acute, densely reticulate and almost solid. Ch. crowded, alternate or to obout 5% opposite, more or less antrorse, straight or slightly bent, 12—20 μ long; stc. cylindric, 2—7 μ long; hc. subglobose, piriform or slightly rounded-angulose, straight or bent, 10—14×10—13 μ. Mh. mixed with ch., few, ampulliform, 15—21×7—9 μ, sometimes on separate hyphae, opposite or alternate. Ms. numerous, scattered straight simple acute to 700×9—12 μ. P. closely crowded verrucose to 200 μ diam. Sp. oblong obtuse 4-septate constricted 40—49× 14—17×12—14 μ.

On *Plumbago zeylanica* Uganda Hansford 1457 (type) 1751 1943 2495 3154 3564; Gold Coast Deighton CB 788; Tanganyika Hansford!

This species can be strongly parasitic killing leaves and stems when heavily infected.

Host Family 242. Plantaginaceae.

(1480) *Meliola plantaginis* Hansf. & Stev. Journ. Linn. Soc. London **51**: 280. 1937.

Cols. epiphyllous rarely also hypophyllous, to 1 mm. diam., thin, often confluent over the leaf. Hyphae crooked, cells mostly 20—25×5—7 μ, branching opposite or irregular at acute angles, loosely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 12—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovate to piriform, entire or slightly rounded-angulose, 8—14×7—9 μ. Mh. mixed with ch not numerous, opposite or alternate, ampulliform, 15—22×6—8 μ. Ms. not numerous, thinly scattered and grouped around P., straight or slightly flexuous, not uncinate simple, obtuse, to 320×7—9 μ. P. in loose central group, verrucose to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 27—35×10—13 μ.

On *Plantago palmata*, Uganda, Hansford 796 (type); Congo Belge, Hendrickx 3274; — On *Plantago* sp., Brazil, Ule, 626 (S).

Host Family 243. Campanulaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.5340 Cols. dense; hyphae undulate to sinuous; hc. ovate-piriform, entire ..... *clermontiae* (1481)

Irenopsis

3301.4230 Cols. subdense; hyphae crooked; hc. ovate-clavate, entire; ps. 0—6, flexuous, uncinate to tortuous above, to 110μ ..... *rollandiae* (1482)

Meliola

3112.4221 Cols. thin; hyphae undulate; hc. ovate-piriform, entire; ms. obtuse ..... *lobeliae* (1483)

(1481) *Amazonia clermontiae* Hansf., Sydowia Beih. **1**: 89. 1957.

Cols. epiphyllous, to 1 mm. diam., dense, smooth. Hyphae undulate to sinuous, cells mostly 12—20×7—8 μ, branching alternate or opposite, acute, closely radiating-reticulate. Ch. alternate, usually bent, more or less antrorse, 18—23 μ long; stc., cylindric to cuneate, 3—8 μ long; hc. piriform to ovate, widely rounded at apex, entire, straight or slightly bent, 12—16×9—11 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—18×7—9 μ. P. single or 2—3 μ in centre of colony, flattened-globose beneath a radiate layer of mycelium with crenate margin, to 330μ diam. and about 150—180 μ high in centre, Sp. oblong to subellipsoid, obtuse, 4-septate, deeply constricted, 46—52×18—22 μ.

On *Clermontia persicaefolia*, Hawaii, Heller 2394 (K, type); — On *C.* sp., Hawaii, Degener 7819 (= IMI 45487), Stevens 979 p. p.; — On *C. multiflora*, Hawaii, Stevens 329, 330 (FLS), with spores 39—44×17—20 μ, and hc. slightly smaller than in type.

This was originally described by Ellis & Everhart as "*Asterina sphaerelloides*" (Bull. Torrey Bot. Club, 1897, p. 126) and was re-named *A. ellisii* Sacc. & Syd. in Syll. Fung. 14: 693. 1899. The original description refers almost entirely to the *Dimerium* hyper-parasite present on the specinem, and hence the original epithet must be discarded. Stevens in Bull. Bishop Mus. 19, 1925, referred his Hawaiian collections on *Clermontia* to *Amazonia asterinoides*.

(1482) *Irenopsis rollandiae* Hansf., Sydowia Beih. **1**: 94. 1957.

Cols. hypophyllous, to 3 mm. diam. or confluent, hidden beneath the leaf tomentum, with only the P. showing, smooth. Hyphae crooked, irregularly branched, becoming closely reticulate, cells mostly 20—35×5—7 μ. Ch. alternate, spreading, mostly bent, 17—33 μ long; stc. cuneate to cylindric, 4—22 μ long; hc. ovate to clavate, entire, 12—17×8—11 μ. P. scattered, verrucose, to 225 μ diam.; ps. 0—6, arising from upper half of wall, spreading or erect, flexuous, simple, obtuse, often uncinate to contorted above, smooth, dark brown, 2—3-septate, to 110×7 μ. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 37—48×15—17 μ, often slightly bent, the central cell usually distinctly the largest.

On *Rollandia argentea*, British Guiana, Stevens 55a, type (FLS); — On *R. fruticosa*, British Guiana, Stevens 55 (FLS).

These specimens were originaly referred by Stevens (Ann. Mycol. Berlin 25: 424) to *Appendiculella sororcula*).

(1483) *Meliola lobeliae* Stev., Bull. Bishop Mus. **19**: 29. 1925.

Cols. amphigenous, mostly hypophyllous, thin. Hyphae undulate, cells mostly 15—25×5—6 μ, branching opposite, acute to wide, loosely interwoven-reticulate. Ch. opposite, more or less antrorse, straight or bent, 12—15 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate to piriform, entire, 9—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. (Ms. scattered and grouped around P., few, straight, simple, obtuse, to 260×9 μ. — Stevens, l. c. In the CUP copy of the type there are no setae). P. scattered, slightly verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—45×16—18 μ.

On *Clermontia* sp., Hawaii, Stevens 1154, type (CUP, FLS).

(Also on ? *Lobelia* sp., vide infra).

Host Family 244. Lobeliaceae.

(1484) *Meliola lobeliae* Stev., Bull. Bishop Mus. **19**: 29. 1925.

Cols. hypophyllous, thin, to 3 mm. diam. or confluent. Hyphae substraight, branching at wide angles, loosely reticulate, cells mostly 15—30×6—7 μ. Ch. opposite or alternate, slightly antrorse, substraight, 11—15 μ long; stc. cylindric, 2—4 μ long; hc. ovate to cylindric, entire, 8—12×7—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—18×7—8 μ. Ms. thinly scattered and grouped around P., straight or slightly bent, simple, obtuse to subacute to 260×8—9 μ. P. scattered or loosely aggregate in centre of colony verrucose to 180 μ diam. Sp. not seen.

On ? *Lobelia* sp., Hawaii, Stevens 979 (CUP, FLS).

The copy in CUP is labelled as on *Lobelia* sp., while that in Univ. Illinois is labelled *Clermontia*.

Host Family 245. Goodeniaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.3240	Cols. dense; hyphae undulate to crooked; hc. globose-piriform, entire	*scaevolae*	(1485)

Meliola

3112.4232	Cols. dense; hyphae substraight; hc. subglobose-oblong, entire; ms. obtuse	*scaevolicola*	(1486)
3111.4222	Cols. thin; hyphae substraight to undulate; hc. globose, entire; ms. acute	*scaevolae*	(1487)

(1485) *Amazonia scaevolae* Hansf., Sydowia Beih. **1**: 90. 1957.

Cols. amphigenous, dense, smooth, usually with 1—2 central perithecia. Hyphae undulate to crooked, branching opposite or irregular at wide angles, becoming closely reticulate, cells mostly

10—15×6—7 μ. Ch. alternate, antrorse or spreading, 13—18 μ long; stc. cuneate, 3—7 μ long; hc. globose to piriform, entire, 9—13×8—10 stc. cuneate, 3—7 μ long; hc. globose to piriform, entire, 9—13×8—10 μ. Mh. few, mixed with ch., alternate, ampulliform to conoid, 15—20×6—7 μ. P. single, or 2—3 in centre and often laterally connate, flattened- globose beneath a radiate layer of mycelium, slightly fimbriate at margin, to 330 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—38×15—17 μ.

On *Scaevola* sp., Hawaii, Stevens 634 (type), 640; — On *S. glabra*, Hawaii, Stevens 472.

(1486) *Meliola scaevolicola* (Stev.) Hansf., comb. n.

= *Irene scaevolicola* Stev., Bull. Bishop Mus. **19**: 45. 1925.

= *Irenopsis scaevolicola* Stev., Ann. Mycol. **25**: 434. 1927.

Cols. amphigenous, mostly hypophyllous, to 2 mm. diam., dense. Hyphae substraight, cells mostly 13—20×5—6 μ, branching opposite at wide angles, closely reticulate and almost solid. Ch. opposite save where too crowded, more or less antrorse, straight or slightly bent, 12—18 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose to oblong, entire, 9—14×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. few, grouped around P., straight or flexuous, simple, obtuse, to 380×7—8 μ. P. in central group, verrucose, to 230 μ diam., glabrous. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—47×17—19 μ.

On *Scaevola chamissoniana*, Hawaii, Stevens 160 (type), 616, 778, 510, 243, 486, 602, 698, 229, 492, 774; — On *S. mollis*, Hawaii, Stevens 663, 331, 696, 703, 251.

(1487) *Meliola scaevolae* Syd., Ann. Mycol. **12**: 551. 1914.

Cols. hypophyllous, thin, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 25—35×5—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate or very rarely opposite, straight, spreading or subantrorse, 12—16 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose, entire, 8—11 μ diam. Mh. mixed with ch., alternate, ampulliform, 15—18×6—7 μ. Ms. few, scattered, straight, simple, acute to subacute, to 375×5—7 μ. P. scattered, verrucose to 150 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 35—43×13—15 μ.

On *Scaevola frutescens*, Philippines, PBS 21212, type; — On *S. koenigii*, Singapore, Chipp 5948 (K).

Host Family 249. Boraginaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220 Cols. thin; hyphae undulate; hc. globose-piriform or angulose; ps. 2—10, obtuse, flexuous, to 145μ ..... *varroniae* (1488)

Asteridiella

3101.5220	Cols. thin; hyphae straight to crooked; hc. long ovate;	*longipoda*	(1489)
3101.4220	Cols. subdense; hyphae substraight to undulate; hc. ovate, entire, smaller;	*longipoda* var. *minor*	(1490)
3101.4330	Cols. subdense, minute; hyphae substraight; hc. ovoid, crenate to subglobate	*cordiae-salicifoliae*	(1491)
3101.4220	Cols. subdense; hyphae straight to undulate; hc. globose, large	*cordiae*	(1492)
3101.3230	Cols. subdense; hyphae undulate to sinuous; hc. globose, smaller	*usteriana*	(1493)

Meliola

3112.4221	Cols. thin; hyphae substraight; hc. ovate-cylindric, entire, small; ms. acute	*ehretiae*	(1494)
3111.3222	Cols. thin; hyphae substraight; hc ovate-cylindric, entire, larger; ms. acute	*cordiae-rufescentis*	(1495)
3111.3221	Cols. thin, subvelvety; hyphae undulate to crooked; hc. ovate-clavulate, large, entire; ms. obtuse	*cordiicola*	(1496)

(1488) **Irenopsis varroniae** (Deight.) Hansf., comb. n.

= *Meliola varroniae* Deight., Mycol. Paper, IMI **9**: 22. 1944.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae slightly undulate, cells mostly 25—33 × 5—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate or very rarely opposite, spreading or antrorse, usually straight, 15—22 μ long; stc. cylindric or cuneate, 3—6 μ long; hc. globose to ovate, entire, rarely slightly angulose, 10—16 × 11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 17—20 × 6—8 μ. P. scattered, verrucose, to 200 μ diam., ps. 2—10, brown, to 145 μ long, simple, obtuse, 7—10 μ thick below, swollen to 8—13 μ around apex, smooth, thick-walled (2—5 μ), 0—2-septate, rarely straight, usually curved near apex. Sp. oblong, obtuse, 4-septate, slightly constricted, 34—40 × 13—15 × 10—11 μ.

On *Varronia* sp., Porto Rico, Stevens 9133, type, 8139, 7878, 9164, 7412; — On *V. corymbosa*, Porto Rico, Barrus 2959, Whetzel er al. 2516 (CUP).

(1489) *Asteridiella longipoda* (Gaill.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola longipoda* Gaill., Bull. Soc. Myc. France **8**: 178. 1892.

= *Irene longipoda* (Gaill.) Toro, Mycologia **17**: 141. 1925.

= *Irenina longipoda* (Gaill.) Stev., Ann. Mycol. **25**: 459. 1927.

Cols. epiphyllous, to 1 mm. diam., thin. Hyphae substraight to crooked, cells mostly 20—30 × 6—7 μ, branching opposite or irregular at acute angles, loosely reticulate. Ch. alternate, antrorse, straight or slightly bent, 25—40 μ long; stc. elongate cuneate, 7—18 μ long,

often bent; hc. long ovate, rounded to slightly pointed at apex, entire, 17—26×9—13 μ. Mh. mixed with ch., alternate or opposite, conoid to ampulliform, 19—25×7—9 μ. P. scattered, verrucose, to 170 μ diam., surface cells rounded to bluntly conoid, projecting to 10 μ. Sp. ellipsoid, obtuse, 4-septate, slightly constricted, 44—51× 18—20 μ.

On *Tournefortia ramosissima*, Ecuador, Lagerheim, type; Sydow, Fung. aequator. 554.

(1490) *Asteridiella longipoda* (Gaill.) Hansf., var. **minor** Hansf., var. n.

Cols. epiphyllous, to 2 mm. diam., subdense. Hyphae substraight to undulate, cells mostly 15—20×7—8 μ, branching opposite, acute, closely reticulate. Ch. alternate, subantrorse, usually straight, 17—24 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. entire, ovate, slightly pointed at apex, 12—18×9—12 μ. Mh. mixed with ch. in centre of colony, alternate or opposite, ampulliform, 15—20×7—9 μ. P. scattered, rough, to 180 μ diam., surface cells conoid, to 20 μ high and 35—40 μ diam. below. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 35—41×13—16 μ.

On *Cordia nitida*, Porto Rico, Stevens 9329 (type); — On *C. borinquensis*, Porto Rico, Whetzel 610 (CUP); — On *Tournefortia hirsutissima*, Porto Rico, Stevens 5001 (FLS), 7780, 7965.

(1491) *Asteridiella cordiae-salicifoliae* Hansf., Sydowia 10: 52. 1957.

Cols. epiphyllous, to 1 mm. diam., smooth, thin to subdense. Hyphae substraight, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, loosely to rather closely interwoven-reticulate. Ch. alternate, subantrorse, straight or bent, 20—33 μ long; stc. cuneate to cylindric, 4—15 μ long; hc. irregularly ovoid to clavulate, margin crenate to rounded-angulose, rarely sublobate, 16—22× 12—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×7—9 μ. P. scattered, verrucose, to 250 μ diam., surface cells obtusely conoid, to 28 μ high. Sp. oblong to ellipsoid, often slightly wider at one end, obtuse, 4-septate, constricted, 45—50×19—21 μ.

On *Cordia salicifolia*, Argentina, SPEG 1833, type.

(1492) *Asteridiella cordiae* Deight., Sydowia **11**: 52. 1957.

Cols. epiphyllous, thin to subdense, to 3 mm. diam. Hyphae substraight or slightly sinuous, branching opposite or irregular at wide angles, rather closely reticulate, cells mostly 20—30×5—7 μ. Ch. alternate, usually slightly antrorse or sometimes spreading, straight or slightly bent, 17—27 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. cuneate or widely clavate, sometimes subglobose, mostly entire or slightly rounded-angulose, 13—21×12—17 μ. Mh. on separate hyphae, mixed with a few ch., opposite, or sometimes alternate, ampulliform, 12—24×6—7 μ. P. scattered, to 200 μ diam.,

surface cells obtusely or truncately conoid, straight or bent at apex, to 20 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—44×(16)—17—18(—19)×12—13 μ.

On *Cordia myxae*, Sierra Leone, Deighton 3836 (type), 5271; — On *C. obliqua*, Sierra Leone, Deighton 3861 (IMI).

(1493) *Asteridiella usteriana* (Rehm) Hansf., Sydowia **10**: 51. 1957.
= *Meliola usteriana* Rehm, Ann. Mycol. **5**: 523. 1907.
= *Irenina usteriana* (Rehm) Hansf., Proc. Linn. Soc. London, **165**: 169. 1955.

Cols. epiphyllous, to 2 mm. diam. or confluent, subdense. Hyphae sinuous, cells mostly 20—30×6—7 μ, branching usually opposite, acute, loosely to closely radiating-reticulate. Ch. alternate, more or less antrorse, straight, 12—18 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. globose, entire, 10—13×9—12 μ. Mh. few, mixed with ch., alternate, opposite or rarely ternate, ampulliform, 15—20×7—9 μ. P. loosely scattered, verrucose, to 205 μ diam., surface cells conoid to mammillate, to 15 μ high and about 35 μ diam. at base. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—38×12—15 μ.

On ? *Cordia* sp., Brazil, Usteri 42 (S); Usteri 36, type (S ex Rehm); Rehm, Ascomyc. 1875; — On *C. heterophylla*, Venezuela, Sydow, Fung. exot. exs. 801, with hc. slightly larger, 12—17×10—12 μ, and sp. 36—44×14—17 μ; Panama, Stevens 757, 368, 139, 132, 1167, 614, 1118; — On *C.* sp., Porto Rico, Stevens 7472 p. p. (FLS).

(1494) *Meliola ehretiae* Hansf., Sydowia **9**: 16. 1955.

Cols. amphigenous, mostly hypophyllous, rather thin, numerous and confluent over the leaf. Hyphae substraight to undulate, cells mostly 20—25×5—6 μ, branching usually opposite at wide angles, loosely to rather closely reticulate. Ch. about 95 % opposite, spreading, straight or slightly bent, 12—16 μ long; stc. cylindric, 2—5 μ long; hc. cylindric with rounded apex, straight or slightly bent, entire, 9—12×6—8 μ, Mh. mixed with ch., alternate or opposite, ampulliform, 16—25×6—8 μ, neck elongate. Ms. thinly scattered and grouped around P., straight or flexuous, not uncinate, simple acute or subacute, to 230×6—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 40—47×15—18 μ, the middle cell often slightly the largest.

On *Ehretia nunesii*, Philippines, Baker 94, type (S ex Rehm).

(1495) *Meliola cordiae-rufescentis* Hansf. & Batista, Sydowia 10: 68. 1957.

Cols. epiphyllous, thin, to 4 mm. diam. Hyphae substraight, branching opposite, acute to wide, loosely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, spreading or antrorse, straight or

slightly bent, 14—24 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate, piriform or cylindric, entire, 11—18×7—11 μ. Mh. separate, opposite or alternate, ampulliform, 15—22×6—7 μ. Ms. thinly scattered with shorter ones grouped around P., straight, simple, acute, to 400 ×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—34×13—15 μ.

On *Cordia rufescens*, Brazil, Da Silva in IMUR 2174, type.

(1496) *Meliola cordiicola* Hansf., Sydowia Beih. **1**: 105. 1957.

Cols. epiphyllous, thin, thinly velvety, to 2 mm. diam. Hyphae undulate to crooked, branching opposite or irregular, wide, cells mostly 25—35×5—7 μ, loosely reticulate. Ch. alternate, spreading, straight or usually bent, 18—45 μ long; stc. cylindric, 4—30 μ long; hc. ovate to clavulate, entire, 14—22×11—15 μ. Mh. separate in centre, opposite or alternate, ampulliform, 17—23×7—9 μ. Ms. scattered and grouped around P., straight or flexuous, simple, obtuse, to 200×6 μ. P. loosely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×14—16 μ.

On *Cordia* sp., Porto Rico, Stevens 7472, type (FLS).

This occurs mixed with *Asteridiella usteriana*.

Host Family 250. Solanaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3303.3230	Cols. dense; hyphae substraight; hc. globose; ps. 5—8, obtuse, uncinate or bent above, to 210 μ	*arimensis*	(1497)

Asteridiella

3101.5330	Cols. thin; hyphae tortuous; hc. ovate to lobate; P-cells conoid, to 30 μ high	*winteri*	(1498)
3101.5330	Cols. dense; hyphae substraight to undulate; hc. oblong to lobate, large; P-cells conoid-mammillate, to 20 μ high	*duboisiae*	(1499)
3101.4230	Cols. thin; hyphae undulate to sinuous; hc. subglobose to angulose, smaller; P-cells obtuse conoid, to 28 μ high	*plebeja*	(1500)
3101.2220	. . . hc. angulose to lobate	*plebeja* var. *brunfelsiae*	(1501)
3101.4230	Cols. dense; hc. ovate-globose, entire	*laeta*	(1502)
3101.4230	Cols. dense, subcrustose; hyphae undulate; hc. globose to angulose, large; P-cells obtuse conoid, to 35 μ high	*solani*	(1503)
3101.4230	Cols. dense; hyphae sinuous to tortuous; hc. globose-ovate, entire; P-cells rounded-conoid, to 10 μ high	*portoricensis*	(1504)
3101.4220	Cols. thin; hyphae undulate; hc. subglobose to piriform or angulose; P-cells rounded, to 10 μ high	*tabaquitensis*	(1505)

3101.4230 Cols. subdense; hyphae sinuous; hc. globose-piriform, small; P-cells conoid-mammillate to 10 μ high ..... *acervata* var. *major* (1506)

3101.4230 Cols. thin; hyphae undulate-flexuous; hc. piriform to angulose, large; P-cells obtuse conoid, to 30 μ high ..... *gaillardii* (1507)

3101.4220 Cols. thin; hyphae substraight; hc. globose-ovate, entire; P-cells obtuse conoid, to 20 μ high ..... *schwenkiae* (1508)

3101.4220 Cols. dense; hyphae tortuous; hc. globose to sublobate; P-cells conoid, obtuse, to 50 μ high *henningsii* (1509)

3101.3230 Cols. subdense; hyphae tortuous; hc. ovate, angulose; P-cells conoid, obtuse, to 30 μ .... *solanacearum* (1510)

3103.3230 Cols. subdense; hyphae tortuous; hc. subglobose-oblong, entire..... *solanacearum* var. *discopodii* (1511)

3101.3230 Cols. dense; hyphae undulate to sinuous; hc. small, globose, entire; P-cells obtuse conoid, to 50 μ high ..... *acervata* (1512)

3101.3230 Cols. thin; hyphae undulate to crooked; hc. globose to angulose; P-cells cylindric, obtuse, to 50 μ high ..... *adelphica* (1513)

3101.3220 Cols. thin to subdense; hyphae sinuous; hc. globose to irregularly angulose; P-cells obtuse-conoid, to 20 μ high ..... *naucina* (1514)

Meliola

3143.3221 Cols. dense, velvety; hyphae substraight to sinuous; hc. small, subglobose; ms. 1—3-dichotomous, tips acute ..... *dicranochaeta* (1515)

31¾3.4221 Cols. dense, velvety; hyphae straight; hc. ovoid, entire, small; ms. 2—3-furcate, cristate-dentate ..... *wismarensis* (1516)

31¾3.3221 Cols. dense, vevety; hyphae sinuous; hc. small, ovate, entire; ms. irregularly dentate-furcate to 10 μ ..... *wismarensis* var. *antillana* (1517)

31¾3.3221 Cols. dense, velvety; hyphae sinuous to tortuous; hc. small, ovate; ms. cristate furcate-dentate to 10 μ ..... *wismarensis* var. *puyoensis* (1518)

31¾3.3222 Cols. thin; hyphae undulate to sinuous; hc. small, subglobose; ms. 2—3-dentate-furcate . *solanicola* (1519)

3133.3221 Cols. dense, velvety; hyphae undulate; hc. small, globose-ovate; ms. irregularly furcate-dentate, often bent near apex..... *fuscidula* (1520)

31⅓3.4232 Cols. dense, subvelvety; hyphae substraight to undulate; hc. small, ovate; ms. acute or variously dentate to 10 μ ..... *wismarensis* var. *brasiliensis* (1521)

31⅓1.4333 Cols. dense, subcrustose; hyphae substraight to undulate; hc. large, clavate to angulose; ms. acute or 2—4-dentate to 22 μ ..... *cestricola* (1522)

31⅓3.3223	Cols. dense, velvety; hyphae tortuous; hc. small, ovate; ms. acute, obtuse or irregularly dentate to 15 μ	*columbiensis*	(1523)
31⅓3.3222	Cols. thin; hyphae sinuous; hc. ovate; ms. acute or 2-dentate to 12 μ	*pauciseta*	(1524)
31⅓1.3221	Cols. dense; hyphae tortuous; hc. globose to ovate, small; ms. flexuous, obtuse or 2-furcate-dentate	*kartaboensis*	(1525)
3113.3221	Cols. subdense; hyphae substraight to undulate; hc. small, globose; ms. around P., obtuse, flexuous	*solani*	(1526)
3113.3222	Cols. subdense, subvelvety; hyphae sinuous; hc. globose-ovate; ms. obtuse	*schwenkiicola*	(1527)
3111.5233	Cols. dense, velvety; hyphae substraight; hc. oblong, entire; mh. mixed with ch.; ms. subacute	*cestri*	(1528)
3111.4232	Cols. dense, subvelvety; hyphae straight to flexuous; hc. angulose to sublobate; mh. separate; ms. acute	*canfacotensis*	(1528a)
3111.3222	Cols. dense, velvety; hyphae undulate; hc. subglobose to angulose; mh. separate; ms. acute	*cestri-macrophylli*	(1529)
3111.3221	Cols. subdense, velvety; hyphae crooked; hc. large, angulose to sublobate; ms. acute	*capsicola*	(1530)

(1497) *Irenopsis arimensis* Hansf., Sydowia **10**: 43. 1957.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae substraight, opposite or irregularly branched at acute angles, densely reticulate, cells mostly 20—25×6—7 μ. Ch. opposite or alternate, spreading, straight, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. globose to wide ovate, entire, 8—10×7—9 μ .Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—8 μ. P. in central group, verrucose, to 170 μ diam., each with 5—8 erect-spreading setae on upper half; ps. straight or flexuous below, uncinate or merely bent at obtuse apex, 2—4-septate, thick-walled, smooth, to 210×10 μ. Sp. oblong to subellipsoid, obtuse, 4-septate, 35—40×15—18 μ.

On *Solanum stramonifolium*, Trinidad, Baker in IMI 17880, (type); — On *S. jamaicense*, Jamaica, Martyn in IMI 23005.

(1498) *Asteridiella winteri* (Speg.) Hansf., Sydowia **10**: 51. 1957.
= *Meliola winteri* Speg., Anal. Soc. Cienc. Argentina **26**: 53. 1888.
= *Irene winteri* (Speg.) Syd., Ann. Mycol. **15**: 194. 1917.
= *Irene winteri* (Speg.) Syd. var. *hyphopodiigera* (Speg.) Stev Ann. Mycol. **25**: 428. 1927.
= *Meliola winteri* Speg. var. *hyphopodiigera* Speg., Anal. Mus. Nac. Buenos Aires **32**: 359. 1924.

Cols. hypophyllous, hidden in the tomentum of the leaf, with usually only the perithecia showing, thin, 4—6 mm. diam. Hyphae

crooked, buried in the leaf tomentum, irregularly branched, loosely reticulate, cells mostly 30—50×5—7 μ. Ch. alternate, usually irregularly bent, 18—28 μ long; stc. cylindric to cuneate, 2—11 μ long; hc. from subglobose and almost entire, to clavate-oblong and irregularly angulose, 14—20×9—13 μ. Mh. separate, often above the leaf tomentum, on straighter hyphae, opposite or alternate, ampulliform, 15—25×6—8 μ. P. scattered, verrucose, to 250 μ diam., surface cells rounded to obtuse conoid, up to 30 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 45—52×15—19 μ.

On *Solanum verbascifolium*, Paraguay, Balansa, type (SPEG 548); — On *S.* sp., Paraguay, Balansa 3986 (K, P); Brazil, Rick, Fung. austro-amer. 67, 67-a, 345 (S); Rick in Inst. Biol. S. Paulo 3315; — On *Cestrum* sp., Argentina, SPEG 505 (type of var. *hyphopodiigera*).

(1499) *Asteridiella duboisiae* Hansf., Sydowia **10**: 47. 1957.
= *Irenina duboisiae* Hansf., Proc. Linn. Soc. N.S.W., **78**: 80. 1953.

Cols. epiphyllous, dense, to 1 mm. diam. or confluent, smooth. Hyphae substraight to undulate, cells mostly 20—25×7—9 μ, branching usually opposite at wide angles, closely reticulate. Ch. alternate, somewhat antrorse, straight or bent, 20—35 μ long; stc. cylindric, 5—15 μ long; hc. oblong-clavate or irregularly rounded-lobate, versiform, 15—23×12—18 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. in loose central group, rough, to 270 μ diam., surface cells conoid to mammillate, up to 20 μ high and about 40 μ diam. at the base. Sp. ellipsoid, obtuse, 4-septate, constricted, 44—53×19—22×16—19 μ.

On *Duboisia myoporoides*, New South Wales, Fraser 198 (type), 67.

(1500) *Asteridiella plebeja* (Speg.) Hansf., Sydowia 10: 49. 1957.
= *Meliola plebeja* Speg., Bol. Acad. Cienc. Cordoba **11**: 238. 1889.
= *Irene plebeja* (Speg.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.
= *Irenina plebeja* (Speg.) Stev., l. c. **25**: 453. 1927.
= *Meliola plebeja* Speg. var. *asperrima* Speg., Bol. Acad. Cienc. Cordoba, **11**: 239. 1889.
= *Irenina plebeja* (Speg.) Stev. var. *asperrima* (Speg.) Stev., Ann. Mycol. **25**: 453. 1927.

Cols. hypophyllous, 2—3 mm. diam., thin, smooth. Hyphae undulate to tortuous, cells mostly 20—25×7—9 μ, branching alternate at acute angles, loosely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 19—24 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. subglobose to rounded-angulose, 13—16×12—15 μ. Mh. in centre of colony, mixed with ch., alternate or opposite, ampulliform, 18—28×

7—8 μ. P. loosely aggregate in centre, verrucose, to 240 μ diam., surface cells obtusely conoid, to 28 μ high and about 40 μ diam. at base, often bent. Sp. oblong, obtuse, 4-septate, constricted, 37—43 × 14—16 μ.

On *Solanaceae* indet., Brazil, Puiggari 2759 ,type, (SPEG, P); Brazil, Puiggari 1551 (P, type of var. *asperrima*); — On *Solanum* sp., Porto Rico, Kevorkian 163 (F); British Guiana, Stevens 302 p. p. (FLS); — On ? *Acnistus* sp., Argentina, SPEG 535.

(1501) *Asteridiella plebeja* (Speg.) Hansf. var. **brunfelsiae** (Cif.) Hansf. comb. n.

= *Meliola plebeja* Speg. var. *brunfelsiae* Cif., Mycopathologia **7**: 175. 1954.

"Differs from type: sp. smaller, 28—30 × 12—15 μ; ch. ellipsoid, ovoid, cylindric or irregular; hc. irregularly incised-lobate or angulose, 11—14 × 8—10 μ; stc. 3—5 μ long."

On *Brunfelsia abbottii*, San Domingo, Ekman 4211, type.

Specimens of this have not become available to the present author.

(1502) *Asteridiella laeta* (Theiss.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola laeta* Theiss., Broteria **12**: 24. 1914.

= *Irenina laeta* (Theiss.) Stev., Ann. Mycol. **25**: 452. 1927.

Cols. closely scattered, 2—3 mm. diam., dense. Hyphae alternately branched, cells 30—35 × 5,5—6,5 μ. Ch. alternate, spreading; stc. 3—4 μ long; hc. ovate to globose, entire, straight, 10—12 μ wide. Mh. alternate, often geminate, ampulliform, bent. P. globose, verrucose, to 220 μ diam. Sp. cylindric, straight or rarely bent, 4-septate, slightly constricted, 48 × 17 μ.

On *Solanum* sp., Brazil, Rick, type.

Specimens of this species have not been traced by the present author.

(1503) *Asteridiella solani* McAlpine, Proc. Linn. Soc. N.S.W., **22**: 36. 1897.

Cols. amphigenous, also on petioles and young stems, easily secedent, dense, to 1 mm. diam. or confluent, smooth. Hyphae sinuous to tortuous, cells 12—25 × 8—11 μ, branching alternate or irregular, not opposite, acute, densely reticulate and becoming almost solid. Ch. alternate, more or less antrorse, usually straight, 15—24 μ long; stc. cylindric, 3—7 μ long; hc. globose to widely piriform, entire or rarely slightly rounded-angulose, 12—19 × 11—17 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform with short neck. P. in loose central group, rough, to 250 μ diam., most surface cells prolonged into translucent dark brown, obtusely conoid outgrowths, not striate, to 35 μ high by 30—40 μ diam. at base. Sp. oblong, obtuse, 4-septate, constricted, 37—44 × 14—17 μ.

On *Solanum viride*, New South Wales, Maiden, type.

(1504) *Asteridiella portoricensis* (Toro) Hansf., Sydowia **10**: 49. 1957.

= *Irene portoricensis* Toro, Mycologia **17**: 141. 1925.

= *Irenina portoricensis* (Toro) Stev., Ann. Mycol. **25**: 453. 1927.

= *Meliola borinquena* Cif., Mycopathologia **7**: 104. 1954.

Cols. epiphyllous, to 1,5 mm. diam., dense, smooth. Hyphae sinuous to tortuous, cells mostly 12—20×7—8 μ, branching alternate or irregular, rarely opposite, acute, close, forming a solid, radiate colony. Ch. alternate, antrorse, straight or slightly bent, 14—23 μ long; stc. cylindric to cuneate, 2—10 μ long; hc. globose to ovate, entire, 12—16×9—16 μ. Mh. separate, few, opposite or alternate, ampulliform, 15—20×7—9 μ. P. in central group, often single, verrucose, to 240 μ diam., surface cells rounded to conoid, projecting to 12 μ; perithecia commencing as solid radiate plates, much like those of *Amazonia*, then becoming globose. Sp. oblong, obtuse, 4-septate, constricted, 35—44×15—17 μ.

On *Acenistus arborescens*, Porto Rico, Whetzel 2527 (type), Chardon 866 (CUP); Trinidad, Baker in IMI 17884; — On *Solanum* sp., Cameroun, Jacques-Felix 4910 (P).

(1505) *Asteridiella tabaquitensis* Hansf., Sydowia 10: 60. 1957.

Cols. epiphyllous, to 2 mm. diam., thin, smooth. Hyphae undulate, cells mostly 20—25×6—7 μ, branching opposite or irregular, acute, loosely interwoven-reticulate. Ch. alternate, subantrorse, usually straight, 21—28 μ long; stc. cuneate to cylindric, 6—10 μ long; hc. subglobose to piriform, entire or rarely rounded-angulose, 15—18×11—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. loosely scattered, verrucose, to 160 μ diam., surface cells rounded, projecting only about 10 μ. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—44×16—18 μ.

On *Cestrum latifolium*, Trinidad, Baker in IMI 17957, type.

(1506) *Asteridiella acervata* (E. & Ev.) Hansf., var. *major* Hansf., Sydowia 10: 46. 1957.

= *Irene acervata* (Ell. & Ev.) Hansf. var. *major* Hansf., Sydowia **9**: 32. 1955.

Cols. epiphyllous, numerous and somewhat confluent, to 2 mm. diam., subdense, smooth. Hyphae undulate to sinuous, cells mostly 20—30×6—7 μ, branching opposite at varying angles, closely interwoven-reticulate. Ch. alternate, usually straight, more or less antrorse, 12—17 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose, entire, 9—13×8—11 μ. Mh. mixed with ch., opposite or alternate, sometimes ternate, ampulliform, 12—18×6—7 μ. P. in central group, verrucose, to 210 μ diam., surface cells obtusely conoid to mammillate, to 18 μ high. Sp. oblong, obtuse, 4-septate, constricted, 33—40×12—14 μ.

On *Solanaceae* indet., Paraguay, Balansa 3583, type (K, P).

(1507) *Asteridiella gaillardii* Hansf., Sydowia **10**: 48. 1957.
= *Irene gaillardii* Hansf., Sydowia **9**: 55. 1955.

Cols. mostly hypophyllous, to 8 mm. diam. or widely confluent, thin, smooth. Hyphae undulate to flexuous, cells mostly 20—40× 7—8 μ, branching alternate or irregular, acute, loosely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or bent, 18—30 μ long; stc. cuneate, 5—8 μ long; hc. piriform to irregularly rounded-angulose, often bent, 15—24×11—17 μ. Mh. separate, alternate or opposite, ampulliform, 16—27×7—9 μ, neck elongate. P. loosely scattered, rough, to 260 μ diam., surface cells obtusely conoid, sometimes bent, to 30 μ high by 40—45 μ diam. at the base. Sp. oblong, obtuse, 4-septate, constricted, 36—42×15—17 μ.

On *Solanum* sp., Ecuador, 1892, Lagerheim, type (P).

(1508) *Asteridiella schwenkiae* Hansf., Sydowia **10**: 50. 1957.
= *Irene schwenkiae* Hansf., Sydowia **9**: 36. 1955.

Cols. epiphyllous, to 3 mm. diam., smooth ,rather thin. Hyphae straight to slightly undulate, cells mostly 20—25×7—8 μ, branching usually opposite at wide angles, loosely reticulate. Ch. alternate, more or less antrorse, straight or recurved at the tip, 20—25 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. globose to bent ovate, entire or less frequently slightly rounded-angulose, 13—18×11—15 μ. Mh. mixed with ch., opposite or altenate, ampulliform, 13—18×6—8 μ. P. scattered, rough, to 140 μ diam., surface cells obtusely conoid, usually truncate at apex, projecting to 20 μ. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 34—42×13—15 μ.

On *Schwenkia browalloides*, Venezuela, Sydow, Fung. exot. exs. 795 type (S, K, F).

(1509) *Asteridiella henningsii* (Beeli) Hansf., Sydowia **10**: 48. 1957.
= *Meliola solanicola* P. Henn., Engl. Bot. Jahrb. 28: 326. 1901, (non Gaillard) .
= *Meliola henningsii* Beeli, Bull. Jard. Bot. Brux. 7: 100. 1920.
= *Irene henningsii* (Beeli) Hansf., Sydowia **9**: 56. 1955.
= *Irenina solanicola* (P. Henn.) Stev., Ann. Mycol. **25**: 453. 1927.

Cols. amphigenous, to 1 mm. diam. or confluent, dense, smooth. Hyphae crooked, cells mostly 13—20×6—7 μ, branching alternate, acute, densely reticulate. Ch. alternate, straight, 14—18 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. sub-globose, rounded-angulose to shallowly lobate, 10—15×10—18 μ. Mh. separate, opposite or alternate, ampulliform, 15—20×7—8 μ. P. in loose central group, verrucose, to 260 μ diam., surface cells rounded or prolonged into obtuse conoid processes to 50 μ high by about 30 μ diam. at the base, becoming translucent dark brown, but striate, smooth. Sp. oblong, obtuse, 4-septate, constricted, 35—42×13—15 μ.

On *Solanum englerianum*, Tanganyika, Holst 4231 (S ex Berlin, type).

(1510) *Asteridiella solanacearum* Hansf., Sydowia **10**: 50. 1957.
= *Irene solanacearum* Hansf., Sydowia **9**: 35. 1955.

Cols. epiphyllous, subdense, to 1,5 mm. diam., smooth. Hyphae sinuous to tortuous, cells mostly 20—30×6—7 μ, branching alternate or irregular, rarely opposite, acute or wide, closely reticulate. Ch. alternate, straight or bent, 13—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. rarely subglobose and entire, usually irregularly rounded-angulose, often bent, 10—15×8—13 μ. Mh. separate, alternate, rarely opposite, ampulliform, 14—18×6—8 μ. P. in loose central group, rough, to 215 μ diam., surface cells conoid, to 30 μ high by 20—25 μ diam. at the base. Sp. oblong, obtuse, 4-septate, constricted, 31—38×14—15 μ.

On *Solanaceae* indet., Ecuador, Stevens 229 (type); — On *Solanum persicifolium*, Porto Rico, Stevens 5091, 5019; — On *S. rugosum*, Porto Rico, Stevens 8121.

(1511) *Asteridiella solanacearum* Hansf. var. *discopodii* Hansf., Sydowia Beih. **1**: 98. 1957.

Cols. epiphyllous, to 1 mm. diam., thin to dense, smooth. Hyphae crooked, branching alternate or irregular at wide angles, loosely to closely reticulate with rounded or angular meshes, cells mostly 15—30×6—7 μ. Ch. alternate or to 10% opposite, usually bent antrorse or retrorse, 15—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose, ovate to oblong, entire, 11—18×10—14 μ. Mh. separate, alternate or opposite, ampulliform, 14—22×6—7 μ. P. in central group, rough, to 270 μ diam., surface cells obtusely conoid, straight or bent, to 28 μ high. Sp. oblong, obtuse, 4-septate, constricted, 33—38×13—15 μ.

On *Discopodium penninervium*, Congo Belge, Hendrickx 3623, type.

(1512) *Asteridiella acervata* (Ell. & Ev.) Hansf., Sydowia **10**: 46. 1957.
= *Meliola acervata* Ell. & Everh., Bull. Torrey Bot. Club, **24**: 126. 1897.
= *Irene acervata* (E. & Ev.) Hansf., Sydowia **9**: 6. 1955.

Cols. amphigenous, mostly epiphyllous, dense, smooth, to 1 mm. diam. or confluent. Hyphae crooked to sinuous, cells mostly 15—20×6—7 μ, branching close, usually alternate or irregular, acute, closely reticulate and in parts almost solid. Ch. alternate or less than 1% opposite, more or less closely antrorse, straight, 13—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose, entire 9—11 μ diam. Mh. usually separate, opposite, alternate or ternate, closely crowded, ampulliform, 14—19×5—7 μ. P. in close central group, rough, to 230 μ diam., surface cells conoid or prolonged into blunt conoid

processes to 50 μ high by 30—40 μ diam. at the base, becoming translucent dark brown, not striate. Sp. oblong, obtuse, 4-septate, constricted, 28—33×11—12 μ.

On *Physalis peruviana*, Hawaii, Heller 2773 (type), 2062, (K, CUP); Stevens 462, 463, 464, 915. (FLS).

(1513) *Asteridiella adelphica* (Syd.) Hansf., comb. n.

= *Appendiculella adelphica* Syd., Ann. Mycol. **24**: 313. 1926.

= *Irene adelphica* (Syd.) Stev., l. c., **25**: 428. 1927.

Cols. epiphyllous, to 2 mm. diam., thin, smooth. Hyphae crooked to undulate, irregularly branched at acute to wide angles, loosely reticulate, cells mostly 20—30×5—6 μ. Ch. alternate, subantrorse, straight or slightly bent, 13—18 μ long; stc. cuneate, 2—5 μ long; hc. globose to somewhat rounded-angulose, 10—13×9—13 μ. Mh. separate, alternate or opposite, ampulliform, 16—20×7—8 μ. P. scattered or loosely aggregate, rough, to 250 μ diam., surface cells obtusely conoid, projecting up to 50 μ as cylindric processes, often bent, obtuse at apex, dark brown, smooth, rather thick-walled, continuous. Sp. oblong, obtuse, 4-septate, constricted, 31—39×11—15 μ.

On *Solanum erythrotrichum*, Costa Rica, Sydow, Fung. costaric. 55-a, type (FLS).

The outgrowths from the perithecial wall cells do not conform to the definition of "larviform appendages" adopted for the present work, and hence the species is transferred as above; they represent an extreme development of the more normal conic outgrowths in the genus *Asteridiella*.

(1514) *Asteridiella naucina* (Syd.) Hansf., Sydowia **10**: 49. 1957. (3101.3220)

= *Meliola naucina* Syd., Ann. Mycol. **37**: 331. 1939.

Cols. epiphyllous, to 1,5 mm. diam. or confluent, smooth, thin to subdense. Hyphae sinuous, cells moostly 20—30×6—7 μ, branching alternate or irregular, acute, loosely to closely interwoven-reticulate and radiating. Ch. alternate, straight or bent, 18—25 μ long, antrorse or spreading; stc. cylindric to cuneate, 5—9 μ long; hc. subglobose to rounded-angulose and irregular, versiform, 13—18×10—15 μ, often formed well behind the distal septum of the parent cell. Mh. separate, opposite or alternate, ampulliform, 15—21×6—8 μ, neck elongate. P. in loose central group, rough, to 180 μ diam., surface cells obtusely conoid, to 20 μ high. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—37×13—15 μ.

On *Solanum trachycyphum*, Ecuador, Sydow, Fung. exot. exs. 142, type (S).

(1515) *Meliola dicranochaeta* Syd., Ann. Mycol. **24**: 301. 1926.

Cols. hypophyllous, often on leaf edges, more or less confluent, velvety dense, 3—7 mm. diam. Hyphae substraight to undulate,

cells mostly 10—20×6—7 μ, branching opposite, acute or wide, closely reticulate. Ch. opposite or alternate in varying proportions, subantrorse, straight or slightly bent, 12—17 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. ovate, clavate or subglobose, entire, 10—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—17×6—7 μ. Ms. numerous, straight, to 250×7—10 μ, 1—3-dichotomous, or 3-furcate with dichotomous branches, 1-ry to 35 μ, 2-ry to 40 μ, final branches to 50 μ, acute, widely spreading or reflexed. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—37×13—15 μ.

On *Cestrum* sp., Costa Rica, Sydow, Fung. cost. 390, type.

(1516) *Meliola wismarensis* Stev., Ann. Mycol. **26**: 191. 1928.

Cols. amphigenous, dense, velvety, to 4 mm. diam. Hyphae substraight to slightly undulate, cells mostly 13—20×6—7 μ, branching opposite or irregular, acute to wide, densely reticulate. Ch. alternate or mostly opposite, antrorse or spreading, 13—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to ovate, entire, straight or slightly bent, 9—13×7—10 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 15—20×6—7 μ. Ms. numerous, scattered, straight, to 230×9—10, apex shortly 2—3-furcate to 15 μ, with dentate branches (—10 μ), or almost cristate-dentate, P. scattered, verrucose, to 190 μ diam. Sp. oblong to narrowly ellipsoid, obtuse 4-septate, constricted, 37—44×11—14 μ.

On *Solanum* sp., British Guiana, Stevens 302, type (FLS, F).

(1517) *Meliola wismarensis* Stev. var. *antillana* Cif., Ann. Mycol. **36**: 227. 1938.

= *Meliola antillana* (Cif.) Syd., Ann. Mycol. **37**: 335. 1939.

Cols. amphigenous and caulicolous, to 3 mm. diam., dense, velvety. Hyphae crooked, cells mostly 15—25×5—7 μ, branching opposite, acute, closely reticulate. Ch. opposite or alternate, usually straight, more or less antrorse, 10—13 μ long; stc. cylindric, 2—4 long; hc. globose to ovate, entire, 7—10×6—8 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 10—15×6—7 μ. Ms. closely scattered, straight or slightly flexuous, to 250×7 μ, apex various, dentate, or with 2—3 short, dentate branches, ultimate teeth to 10 long, acute. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 34—40×12—13 μ.

On *Solanum antillanum*, San Domingo, Ciferri, Mycofl. domin. exs. 221, type.

The setal branching is looser here than in the type, and most setae are bent just below the branching.

(1518) *Meliola wismarensis* Stev. var. *puyoensis* Syd., Ann. Mycol. **37**: 334. 1939.

Cols. dense, to 4 mm. diam., or confluent shortly velvety. Hyphae substraight to undulate, cells mostly 20—30×5—7 μ, branch-

opposite, acute, becoming closely reticulate. Ch. opposite or alternate, subantrorse, straight or bent, 11—15 μ long; stc. cylindric 2—5 μ long; hc. subglobose to ovate, entire, 8—12×7—10 μ. Mh. few in centre on separate hyphae, opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. numerous, closely scattered, straight, to 240×10—11 μ, apex divided into 2—4 short branches (—10 μ) and these cristate with divergent teeth to 10 μ long. P. closely scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—38× 12—13 μ.

On *Solanum campanuliformis*, Ecuador, Sydow, Fung. aequator. 886, type (S); — On *S.* sp., Brazil, Ule, Herb. brasil. 717 (S).

(1519) *Meliola solanicola* Gaill. Bull. Soc. Myc. France 8: 184. 1892.

Cols. hypophyllous, scattered or widely confluent, thin. Hyphae sinuous, branching opposite at acute to wide angles, loosely reticulate, cells mostly 25—30×5—6 μ. Ch. opposite or to 90% alternate, slightly antrorse, straight, 8—10 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, entire, 6—8×5—7 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 14—18×6—8 μ. Ms. loosely scattered and grouped around P., straight or slightly flexuous, not uncinate, to 350×7—8 μ, simple and acute or 2—3-dentate to 18 μ, rarely 2-furcate to 10 μ with divergent dentate branches. P. loosely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 29—37×13—14 μ.

On *Solanum incomptum*, Costa Rica, Sydow, Fung. exot. exs. 623; — On *Solanum* sp., Ecuador, Lagerheim, type.

(1520) *Meliola fuscidula* Gaill., Le Genre *Meliola*, 1892, p. 104.

Cols. amphigenous, dense, velvety. to 3 mm. diam., or numerous and confluent. Hyphae sinuous to undulate, cells mostly 20—30× 6—7 μ, branching opposite or irregular, at wide angles, closely reticulate-interwoven. Ch. alternate or to 20% opposite, usually straight, more or less antrorse, 10—13 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. globose to ovate, entire, 7—10×7—9 μ. Ms. numerous, scattered, straight or bent near apex, not uncinate, to 290×6—8 μ, apex irregularly dentate to 15 μ, or with 2 branches to 40 μ and these dentate. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 35—41×11—15 μ.

On ? *Solanum* sp., Brazil, Ule, Herb. brasil. 543, type.

(1521) *Meliola wismarensis* Stev. var. *brasiliensis* Hansf., Sydowia **10**: 96. 1957.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 20—35×6—7 μ, branching opposite, acute or wide, closely reticulate. Ch. opposite or alternate, more or less antrorse, usually slightly bent, 11—16 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. ovate to subglobose, entire, 8—12×7—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 15—20×

7—8 μ. Ms. fairly numerous, straight or somewhat arcuate, to 360× 8—10 μ, apex dentate to 10 μ or less commonly simple and acute. P. scattered, verrucose, to 220 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 36—43×16—19×14—15 μ.

On *Solanum* sp., Brazil, Theissen 43-b (S, ex Rehm), type; Theissen 847 (F).

(1522) *Meliola cestricola* Stev., Ann. Mycol. 26: 211. 1928.

Cols. amphigenous, dense, subcrustose, 1—4 mm. diam. Hyphae undulate, cells mostly 15—25×7—10 μ, branching alternate or irregular, not opposite, acute, densely reticulate and almost solid. Ch. alternate, more or less antrorse, straight or bent, 15—33 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. globose, oblong or somewhat irregular. entire or sublobate, 12—22×10—17 μ, versiform. Mh. separate, opposite or alternate, ampulliform, 17—22×7—9 μ. Ms. scattered, straight. simple and acute, or 2—4-dentate to 22 μ, to 700×9—11 μ. P. scattered, slightly verrucose, to 230 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—50×19—22 μ.

On *Cestrum* sp., Costa Rica, Stevens 346, type (FLS, F).

(1523) *Meliola columbiensis* Hansf., Sydowia 9: 61. 1955.

Cols. amphigenous, to 3 mm. diam., dense, velvety. Hyphae crooked, cells mostly 13—20×5—7 μ, branching close, opposite, at wide angles, closely reticulate. Ch. opposite or alternate in varying proportions, straight or bent, spreading or antrorse, 10—14 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. subglobose to ovate, entire, 7—11×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—20×7—8 μ. Ms. numerous, scattered and with shorter ones grouped around P., simple and obtuse to acute, or variously dentate to 15 μ, to 950×8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—37× 12—13×10—12 μ.

On *Solanum* sp., Colombia, Killip & Garcia 33609, type (F).

(1524) *Meliola pauciseta* Hansf., Sydowia 9: 20. 1955.

Cols. epiphyllous, to 2 mm. diam., thin. Hyphae sinuous, cells mostly 15—25×6—7 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate or about 2% opposite, antrorse, straight or bent, 12—19 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to oblong, entire, straight or bent, 9—14× 7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×7—9 μ. Ms. thinly scattered, few, straight, simple and acute or 2-dentate to 12 μ, to 350×8—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—35×13— 14 μ.

On *Solanum* sp., Brazil, Ule, Herb. brasil. 2386, type (S).

(1525) *Meliola kartaboensis* Stev., Ann. Mycol. 26: 249. 1928.

Cols. amphigenous, mostly epiphyllous, thin to subdense, to

10 mm. diam., or numerous, small and sub-confluent, velvety. Hyphae undulate to tortuous, cells mostly 15—25×5—7 μ, branching opposite or irregular, acute, densely interwoven-reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 12—16 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. subglobose to wide ovate, entire, 9—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—8 μ. Ms. numerous, scattered, substraight to somewhat flexuous, simple, obtuse, to 280×7 μ, sometimes apex bifurcate to 10 μ, with obtuse teeth. P. scattered, verrucose, to 120 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—32×10—12 μ.

On *Solanum* sp., British Guiana, Stevens 635, type (FLS, F).

(1526) *Meliola solani* Stev., Illinois Biol. Monogr. 2: 15. 1916.

= *Irenopsis solani* Stev., Ann. Mycol. 25: 439. 1927.

Cols. amphigenous, 2—4 mm. diam., subdense, smooth. Hyphae undulate to substraight, cells mostly 25—30×6—7 μ, branching opposite, acute, closely interwoven-reticulate. Ch. opposite or to 30% alternate, more or less antrorse, straight, 11—13 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 8—10 μ diam. Mh. mixed with ch., alternate or opposite, ampulliform, 12—15×6—8 μ. Ms. arising only from the perthecial discs, in groups of 5—10, not from the perithecia themselves, straight or somewhat incurved, not uncinate, simple, obtuse, to 120×7—8 μ. P. loosely scattered, verrucose to nearly smooth, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—37×12—14 μ.

On *Solanum jamaicense*, Porto Rico, Stevens 5750, type; Jamaica, Martyn 241 (CUP); — On *S.* sp., British Guiana, Stevens 615; Panama, Stevens 1321, 1048, 1119; Costa Rica, Stevens 230 (FLS).

(1527) *Meliola schwenkiicola* Hansf., Sydowia 9: 48. 1955.

Cols. mostly epiphyllous, to 2 mm. diam. or sometimes confluent, subdense, slightly velvety. Hyphae sinuous, cells mostly 18—25×6—7 μ, branching opposite or irregular, acute, closely reticulate. Ch. alternate or opposite in varying proportions, straight or bent, more or less antrorse, 9—14 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. globose to ovate, entire, 7—11×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. Ms. mostly grouped around P., straight, simple, obtuse, to 450×7—9 μ. P. in loose central group, slightly verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 32—38×11—14 μ.

On *Schwenkia browalloides*, Venezuela, Sydow, Fung. exot. exs. 795 p. p., type (mixed with *Asteridiella schwenkiae*).

(1528) *Meliola cestri* Tehon, Bot. Gaz. 57: 505. 1919.

Cols. epiphyllous, to 3 mm. diam., dense, velvety. Hyphae substraight, branching opposite at wide angles, densely reticulate, cells mostly 20—30×8—10 μ. Ch. alternate, spreading, straight or

slightly bent, 22—28 μ long; stc. cylindric, 5—10 μ long; hc. oblong entire 16—22×10—12 μ. Mh. mixed with ch. opposite or alternate ampulliform 22—28×8—11 μ. Ms. scattered and grouped around P. straight simple subacute to 1000×9—11 μ. P. in loose central group verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—52×19—22×15 μ.

On *Cestrum* sp., Porto Rico, Stevens 7576, type (FLS).

(1528-a) **Meliola canfacotensis** Hansf., sp. n.

Plagulae plerumque epiphyllae, dense, subvelutinae, usque ad 3 mm. diam., vel numerosae et subconfluentes. Hyphae brunneae, subrectae vel flexuosae, alternatim vel irregulariter acuteque ramosae, dense reticulatae, cellulis plerumque 15—27×9—10 μ. Hyphopodia capitata alternata, antrorsa vel patentia, saepius curvata, 22—36 μ longa; cellula basali cuneata vel cylindracea, 4—11 μ longa; cellula apicali versiformi, angulosa vel sublobata, saepe curvata, 17—27× 13—20 μ. Hyphopodia mucronata praecipue in hyphis distinctis evoluta, opposita vel alternata, ampullacea, 18—26×7—8 μ. Setae myceliales dispersae, etiam juxta perithecia aggregatae, atrae, rectae, simplices, acutae, usque ad 400×9—11 μ. Perithecia subaggregata, atra, globosa, verrucosa, usque ad 240 μ diam. Sp. atrobrunneae, oblongae, obtusae, 4-septatae, constrictae, 39—45×16—19×15—16 μ.

Hab. in foliis *Solani* spec., Canfacoto, Ecuador, Lagerheim in Herb. Patouillard (F).

(1529) *Meliola cestri-macrophylli* Hansf., Sydowia Beih. 1: 103. 1957.

Cols. hypophyllous, dense, to 8 mm. diam. or confluent, velvety. Hyphae undulate, branching opposite, subrectangular, loosely to closely reticulate, cells mostly 15—20×7,5 μ. Ch. alternate or less than 1% opposite, antrorse or spreading, often bent, 13—19 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to oblong, often bent, entire or slightly rounded-angulose, 10—15×9—11 μ. Mh. separate, opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 360×7,5 μ. P. subaggregate, verrucose, to 165 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×13—15×11 μ.

On *Cestrum macrophyllum*, Porto Rico, Stevens 8561 (type), 8301 (FLS).

(1530) *Meliola capsicola* Stev., Illinois Biol. Monogr. 2: 509. 1916.

Cols. amphigenous and caulicolous, 1—3 mm. diam., rather dense, velvety. Hyphae crooked, cells mostly 15—20×8—10 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 20—30 μ long; stc. cylindric to slightly cuneate, 5—11 μ long; hc. clavate to irregular, usually rounded-angulose to sublobate, straight or bent, 15—22×10—19 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 17—28×

6—9 μ. Ms. numerous, scattered, straight or slightly bent, to 270 × 10 μ, simple, acute. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—40 × 14—16 μ.

On *Capsicum baccatum*, Porto Rico, Stevens 8019 (type), 7698; San Domingo, Ciferri 2782, 3100, Ciferri, Mycofl. doming. exs. 53. — On *C. frutescens*, San Domingo, Ciferri, Mycofl. doming. exs. 53-bis, with setae to 460 μ long.

Host Family 251. Convoluvlaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

2111.4221	Cols. caulicolous, dense; hyphae substraight; hc. subglobose to sublobate; ms. obtuse	*cuscutae*	(1530a)
3143.4221	Cols. dense, vevlety; hyphae substraight; hc. globose; ms. 1—2-dichotomous, obtuse.....	*pallida*	(1531)
3142.3221	Cols. subdense; hyphae straight; hc. small ovate; ms. 1—2-dichotomous, obtuse	*permixta*	(1532)
3141.4231	Cols. subdense, velvety; hyphae straight to sinuous; hc. ovate or sublobate; ms. 2-dichotomous, obtuse	*quadrispina*	(1533)
3113.3221	Cols. dense; hyphae straight to sinuous; hc. globose; ms. obtuse to acute	*malacotricha*	(1534)
3113.6231	Cols. dense, velvety; hyphae substraight; hc. globose-piriform; ms. acute	*francevilleana*	(1535)
3113.5222	Cols. dense, velvety; hyphae substraight; hc. angulose to sublobate; ms. acute	*decidua*	(1536)
3112.3222	Cols. dense; hyphae substraight; hc. globose; ms. acute	*malacotricha* var. *major*	(1537)
3112.4223	Cols. subdense, velvety; hyphae straight; hc. globose; ms. acute	*bonamiae*	(1538)
3111.4233	Cols. dense, velvety; hyphae substraight; hc. large, ovate-irregular; ms. obtuse	*erycibis*	(1539)
3111.3221	Cols. dense; hyphae sinuous; hc. globose-ovate; ms. obtuse to clavulate	*clavulata*	(1540)
3111.4222	Cols. dense, velvety, parasitic; hyphae substraight; hc. angulose to lobate; ms. clavate	*clavulata* var. *jamaicensis*	(1539a)
3111.3221	Cols. thin to subdense; hyphae sinuous; hc. globose; ms. obtuse	*clavulata* var. *ipomoeae*	(1541)
3111.3231	....	*caymanensis*	(1542)
3113.3231	.....	*francevilleana* var. *abbreviata*	(1543)

(1530-a) *Meliola cuscutae* Hansf., Sydowia **11**: 55. 1957.

Cols. caulicolous, confluent, dense, to 5 mm. long. Hyphae substraight to slightly undulate, branching alternate or irregular, acute to wide, densely reticulate, cells mostly 20—30 × 7—9 μ. Ch. alternate,

subantrorse, straight or bent, 18—26 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. subglobose, entire, angulose or sublobate, 11—17 × 11—17 μ. Mh. few, mixed with ch., mostly alternate, ampulliform, 17—28 × 9—10 μ, neck elongate. Ms. scattered, substraight to flexuous, simple, obtuse, to 330 × 7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, bent, 3-septate, constricted, 42—48 × 15—17 μ.

On *Cuscuta* sp., Trinidad, Thaxter 7381 (type), 7475 (F).

(1531) *Meliola pallida* Stev., Ann. Mycol. 26: 177. 1928.

Cols. epiphyllous, 2—3 mm. diam., dense, velvety. Hyphae straight to undulate, cells mostly 15—25 × 6—8 μ, branching opposite at varying angles, very closely reticulate and almost solid. Ch. opposite or alternate, spreading or subantrorse, 9—12 μ long; stc. cylindric, 2—4 μ long; hc. globose, entire, 7—8 μ diam. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—16 × 7—9 μ. Ms. numerous, scattered, straight, to 160 × 7—8 μ, apex 1—2-dichotomous, 1-ry br. to 60 μ, 2-ry to 30 μ, obtuse at tips, widely spreading; setae entirely pale brown, with rather thick walls, doubtfully septate. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—45 × 14—18 μ.

On *Ipomoea* sp., British Guiana, Stevens 228, type; Jamaica, Thaxter 6692, 7217, 7233 (F); — On *I. glabra*, Venezuela, Sydow, Fung. exot. exs. 1016, and Fung. venez. 237.

(1532) *Meliola permixta* Syd., Ann. Mycol. 21: 90. 1923.

Cols. epiphyllous, rather dense, to 4 mm. diam. Hyphae straight, cells mostly 12—20 × 6—7 μ, branching opposite, wide, loosely reticulate. Ch. opposite, straight, spreading, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. ovate, entire, 8—11 × 6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—18 × 5—7 μ, neck elongate. Ms. fairly numerous, scattered, to 160 × 7—8 μ, 1—2-dichotomous above, branches widely divergent, obtuse, 1—4 μ to 30 μ, 2-ry to 90 μ long; some setae around P. remain simple and obtuse. P. scattered, verrucose, to 150 μ diam. Sp. oblong to narrowly ellipsoid, obtuse, 4-septate, constricted, 33—38 × 12—14 μ.

On *Ipomoea* sp., North Borneo, Ramos 2146, type (S).

(1533) *Meliola quadrispina* Rac., Parasit. Algen u. Pilze Java's, iii, p. 33. 1900.

= *Meliola quadrifurcata* Rehm, Leafl. Philipp. Bot. 6: 2194. 1914.

Cols. epiphyllous and sometimes caulicolous, to 3 mm. diam., rarely confluent, velvety, subdense. Hyphae straight to tortuous, cells mostly 15—30 × 7—9 μ, irregularly branched ,densely reticulate. Ch. alternate, spreading or antrorse, usually straight, 17—25 μ long; stc. cylindric, 3—6 μ long; hc. subovate to oblong, entire or more usually irregularly angulose to sublobate, 15—20 × 12—18 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous,

to 200 μ high, usually 2-dichotomous with widely spreading straight branches, obtuse, 1-ry to 20 μ, 2-ry to 120 μ long. P. in loose central group, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—45×11—16 μ.

On *Convolvulaceae* indet., Java. Raciborski, type; — On *Lepistemon binectariferum*, Java, Boedijn 2653 p. p. (B); — On *Argyreia roxburghii*, Java (introduced), BO 6050; — On *Ipomoea pes-caprae*, Ambonia, Robinson 2129 p. p.; — On *I. involucrata*, Congo Belge, Hendrickx 1932, 3623 p. p.; — On *I.* spp., Congo Belge, Hendrickx 2623 p. p.; Philippines, PBS 1538 p. p., 407 p. p.; — *Merremia umbellata*, Philippines, Baker 1978 p. p., PBS 8408 p. p.; — On *Hewittia sublobata*, Philippines, PBS 21040, 21847 p. p., 8655 p. p., 34283; — On *Convolvulaceae* indet., Philippines, PBS 18471 p. p., 23964 p. p.

(1534) *Meliola malacotricha* Speg., Anal. Soc. Cienc. Argentina, 22: 59. 1888.

= *Meliola ipomoeae* Earle, Muhlenbergia **1**: 10. 1901.

= *Meliola merremiae* Rehm, Philipp. Journ. Sci., C. Botany, **8**: 253. 1913.

= *Meliola hewittiae* Rehm, l. c.

= *Meliola ipomoeae* Rehm., Ann. Mycol. **12**: 171. 1914.

= *Meliola lepistemonis* Hansf., Journ. Linn. Soc. London **51**: 277. 1937.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam. or numerous and subconfluent, subdense, sometimes thinly velvety. Hyphae straight to sinuous, cells mostly 10—20×6—7 μ, branching opposite or irregular at varying angles, loosely to densely reticulate. Ch. opposite or alternate in varying proportions, usually mostly opposite, more or less antrorse, usually straight, 10—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to ovate, entire, 7—11×7—9 μ. Mh. mixed with ch., or sometimes separate, opposite or alternate, ampulliform, 12—20×6—8 μ. Ms. few to fairly numerous, scattered, straight, simple, usually obtuse, sometimes acute, to 250×7—9 μ, in some specimens to 360 μ long. P. scattered or in a central group, verrucose, to 180 μ diam. Sp. oblong or rarely subellipsoid, obtuse, 4-septate, constricted, 30—40×13—16 μ, mostly 33—37 μ long.

On *Dichondra repens*, Paraguay, Balansa 3494, type (SPEG); 2720 (SPEG, K), Roum. Fung. gall. sel. 5343; Brazil, Ule, Herb. brasil. 1457 (S); Costa Rica, Sydow, Fung. exot. exs. 506 (S), Tonduz in SPEG 608, Pittier 2824 (BRUX), Tonduz 252 (F); —On *Dichondra* sp., Brazil, Ule, Herb. brasil. 685 (S); — On *Aniseia uniflora*, Sierra Leone, Deighton 947, 1714; — On *Calonyction bona-nox*, Porto Rico, Heller 6337 p. p.; — On *Hewittia bicolor*, Philippines, Stevens 961, 1134; — On *H. sublobata*, Philippines, PBS 9779, 21847 p. p., 24034, 3995, 8655, Baker 555 (type of *M.*

hewittiae), Rehm, Ascomyc. 2104, Sydow, Fung. exot. exs. 372, Baker, Fung. malay 253, Stevens 71, 69, 533; — On *Ipomoea batatas*, Sierra Leone, Deighton 214, 1200; — On *I. cathartica*, Porto Rico, Stevens 2183, 8185 p. p., 8183, 7729, 8692; — On *I. digitata*, Sierra Leone, Deighton 330, 1203; Gold Coast, Hughes in IMI 46792; Porto Rico, Stevens 4810; Honduras, Standley 53895; — On *I. involucrata*, Sierra Leone, Deighton 2173, 1563; — On *I. tiliacea*, San Domingo, Ciferri, Mycofl. doming. exs. 21 p. p.; Porto Rico, Stevens 3506, 3909, Whetzel 606 p. p.; — On *I.* sp. indet., Uganda, Hansford 990, 991, 772, 1667, 1929, 2336, Dummer 2371 p. p., 1483 p. p., 1483 p. p.; Ceylon, Herb. Peradeniya 5683; Congo Belge, Hendrickx 2623 p. p.; Vanderyst 9030 p. p., 32091 p. p., 38215, 38216, 43484 p. p. (BRUX); Gold Coast, Hughes in IMI 46791; Porto Rico, Heller 4358 (type of *M. ipomoeae* Earle), 6258, Stevens 9160 p. p., 8083, 6563, 4810, 9001, 8784; Costa Rica, Stevens 442, 447; British Guiana, Stevens 517 p. p.; Panama, Stevens 107, 84, 978, 167, 1320, 101, 135, 936, 964, 1158; Philippines, Baker 407, PBS 1538, Stevens 1586, 1470; Brazil, Ule, Herb. brasil. 3282; On *Jacquemontia pentantha*, Panama, Standley 2975 (F); — On *Lepistemon binectariferum*, Java, BO 12576, 14441 p. p., 11727, 12346, 13010, 15028, 12423; Philippines, Stevens 492; — On *L. owariense*, Uganda, Hansford 1753, 2670, 3315, 3444; — On *Merremia dissecta*, Sierra Leone, Deighton 545; Gold Coast, Deighton CB 1024; — On *M. hasta*, Philippines, Baker 484 (S); — On *M. hederacea*, Philippines, PBS 21789; — On *M. incisa*, Philippines, Baker, Fung. malay. 44, Baker 1840, 1719; — On *M. nymphaefolia*, Java, BO 12405; Philippines, PBS 9090; — On *M. vitifolia*, Philippines, PBS 9085; — On *M. umbellata*, Philippines, PBS 8408 p. p., Baker 1978 p. p.; Java, BO 11766, 14440; Sierra Leone, Deighton 1302, 1674, 2213; — On *Neuropeltis* sp., Sierra Leone, Deighton 2134; — On *Rivea corymbosa*, San Domingo, Ciferri 2798 p. p.; — On *Stictocardia* sp., Uganda, Hansford 1820, 2048. — On *Convolvulaceae* indet., Grenada, Thaxter 7391, 7396 (F). — On *Ipomoea indica*, Formosa, Yamamoto (USDA).

(1535) *Meliola francevilleana* Gaill., Le Genre Meliola, 1892, p. 88.

Cols. epiphyllous, dense, velvety, to 4 mm. diam. Hyphae substraight, cells mostly 15—25×6—8 μ, branching opposite at wide angles, densely reticulate and almost solid in centre. Ch. opposite or alternate in varying proportions, straight or bent, 13—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. globose to piriform, entire, 10—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 280×9—10 μ. P. scattered, verrucose, to 210 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 53—61×16—17 μ, the middle cell usually the largest.

On *Breweria* sp., Congo, De Brazza & Thollon 191, type (P).

(1536) *Meliola decidua* Speg., Bol. Acad. Nac. Cienc. Cordoba, **11**: 240. 1889.

Cols. amphigenous, 2—5 mm. diam., dense, velvety, subcrustose, easily secedent. Hyphae substraight to undulate, cells mostly 14—20× 7—10 μ, branching opposite or irregular, acute, densely reticulate and almost solid. Ch. opposite or alternate, subantrorse or spreading, straight or bent, 16—27 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. rounded-anglose or sublobate, irregular, 12—21×11—20 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20× 6—8 μ. Ms. numerous, closely scattered, straight, simple, acute, to 350×10—11 μ. P. closely scattered, verrucose, to 200 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 49—54×15—17 μ.

On ? *Convolvulaceae* indet., Puiggari 2344, type (SPEG, P).

(1537) *Meliola malacotricha* Speg. var. *major* Beeli, Bull. Jard. Bot. Bruxelles **7**: 89. 1920.

(3112.3222)

= *Meliola densa* Cooke var. *convolvuli* Beeli, l. c. **8**: 2. 1923, p. p.

Cols. epiphyllous, to 1 mm. diam. or numerous and confluent, dense. Hyphae substraight, branching opposite at wide angles, densely reticulate, cells mostly 10—15×6—7 μ. Ch. opposite, closely crowded, slightly antrorse, straight, 10—15 μ long; stc. cuneate, 2—4 μ long; hc. globose, entire, 7—11×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—17×6—8 μ. Ms. scattered, simple, straight, acute, to 380×8—10 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 34—40× 15—18 μ.

On *Ipomoea* sp., Congo Belge, Vanderyst 2064, type, Vanderyst B 220, 2061, 32428 (BRUX). — On *I.* Congo Belge, Hendrickx 3628 p. p.

The host of the type specimen was originally reported as Cucurbitaceous. *Meliola ipomoeicola* Beeli in Bull. Jard. Bot. Brux. **7**: 96. 1920, as exemplified by the type, Vanderyst 2061, is a mixture of *M. clavulata* Wint. and *M. malacotricha* var. *major*, and hence the "species" is to be discarded.

(1538) *Meliola bonamiae* Hansf. & Deight., Mycol. Paper, IMI, **18**: 65. 1948.

= *Meliola malacotricha* Speg. var. *major* Hansf., Reinwardtia **3**: 81. 1954 (non Beeli, 1920).

Cols. epiphyllous, rarely hypophyllous or caulicolous, to 4 mm. diam., subdense, velvety. Hyphae substraight, cells mostly 15—30× 6—8 μ, branching opposite, acute or wide, closely reticulate. Ch. opposite, slightly antrorse, straight, 9—15 μ long; stc. cylindric, 2—5 μ long; hc. globose to wide ovate, entire, 7—13×6—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 9—15×6—8 μ.

Ms. numerous, scattered evenly, straight, simple, acute, to 900× 8—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×15—19×11—13 μ.

On *Bonamia cymosa*, Sierra Leone, Deighton 2206 (type), 1903; — On *Ipomoea pes-caprae*, Amboina, Robinson 2129 p. p.; — On *I. crassicaulis* Java. BO 21100. — On *Convolvulus tenuis*, Venezuela, Muller 2151 (CUP). — On *Evolvulus* sp., Venezuela, Gaillard 2 (Patouillard in F).

(1539) *Meliola erycibis* Hansf., Reinwardtia **3**: 81. 1954.

Cols. amphigenous, to 3 mm. diam. or confluent, dense, velvety. Hyphae substraight, cells mostly 25—35×8—9 μ, branching alternate or irregular, acute, closely interwoven-reticulate. Ch. alternate, spreading, straight or bent, 25—37 μ long; stc. cylindric to cuneate, 8—15 μ long; hc. broadly ovate, piriform or sinuous to irregular, 16—23×12—17 μ. Mh. mostly separate, few, opposite or alternate, ampulliform, 17—24×8—10 μ. Ms. fairly numerous. scattered, straight, simple, obtuse, to 530×9—10 μ. P. scattered, verrucose, to 230 μ diam Sp oblong to subellipsoid, obtuse, 4-septate, constricted, 38—46×15—16 μ

On *Erycibe rheedii*, Java, BO 13001 (type) 12998,

(1539-a) *Meliola clavulata* Wint. var. *jamaicensis* Hansf., Sydowia **11**: 54 1957

Cols. amphigenous, mostly hypophyllous, to 2 mm. diam., dense, velvety, each on invaginated leafspot, showing as a brown leafspot on opposite surface. Hyphae substraight to slightly undulate, branching alternate or irregular, acute, densely reticulate and almost solid, cells mostly 11—25×7—9 μ. Ch. alternate, more or less antrorse, straight or bent, 18—26 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. versiform, irregularly angulose to lobate, 12—17×10—16 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 13—19×7—9 μ. Ms. very numerous, straight, simple, clavate, to 330×8—9 μ, apex to 12 μ thick. P. closely scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—50×17—20×13—15 μ, the middle cell often slightly the largest.

On *Ipomoea* sp., Jamaica, Thaxter 7250, type (F).

(1540) *Meliola clavulata* Wint., Hedwigia **25**: 98. 1886.

= *Meliola pontualli* Vital, Bol. Agric., Pernambuco, **14**: 337. 1947.

= *Meliola densa* Cooke var. *convolvuli* Beeli, Bull. Jard. Bot. Bruxelles, **8**: 2. 1923, pro parte.

Cols. epiphyllous, rarely also hypophyllous, subdense, to 3 mm. diam. Hyphae sinuous, cells mostly 10—20×7—9 μ, branching alternate or irregular, not opposite, acute, densely reticulate. Ch. alternate, usually antrorse, straight, 12—21 μ long; stc. cuneate to cylindric, 2—9 μ long; hc. globose to wide ovate, entire, 9—14×

9—13 μ. Mh. usually separate, opposite or alternate, ampulliform' 14—21×7—9 μ. Ms. few to numerous, straight, simple, obtuse to slightly clavulate at apex, to 280×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 32—39× 12—14×10—12 μ.

On *Ipomoea* sp., San Thomé, Moller (type); — On *I. cairica*, Sierra Leone, Deighton 697, 986; — On *I. cathartica*, Porto Rico, Stevens 8692 p. p., 7729 p. p.; — On *I. digitata*, Sierra Leone, Deighton 1198; Gold Coast, Hughes in IMI 46789, 46790; — On *I. setifera*, Sierra Leone, Deighton 1827, 689; — On *I. rubra*, Porto Rico, Heller 6373, Whetzel 2484, 2485, Seaver 38; San Domingo, Ciferri 2861, 2716; — On *I. batatas*, San Domingo, Ciferri 2920; Porto Rico, Stevens 7927, 8974; Trinidad, ICTA 137, 141, 232; — On *I. glabra*, Venezuela, Sydow, Fung. venez. 200, 210; — On *I. tiliacea*, San Domingo, Ciferri, Mycofl. doming. exs. 21, p. p.; Ciferri 2737; Trinidad, ICTA 284, 1112; Porto Rico, Whetzel 606 p. p.; — On *I. phyllomega*, San Domingo, Ciferri, Mycofl. doming. exs. 21-bis; — On *Ipomoea* sp. indet., Tanganyika, R. Baker; Trinidad, Thaxter 6675 (F), Stevens 897; India, Herb. Crypt. Ind. Or. 1039, 1040; Brazil, Usteri 76 (S); Porto Rico, Stevens 9432, 9160 p. p., 9419, 9342, 5700, 9169, 9368, 9196, 9466, 7926, 8098, 5850, 46, 8655, 7837, 4088, 5725, 7927, Stevenson 3134, 6089-a, Chardon 863; Costa Rica, Stevens 663, 563, 593; Panama, Stevens 957; British Guiana, Stevens 617 p. p., 633; Venezuela, Chardon & Toro 454, 430; Honuras, Standley 53898 p. p.; Uganda, Hansford 2097, Dummer 2371, 1483; Cameroun, Jacques-Felix 4564 (P); Gold Coast, Hughes in IMI 46788; Congo Belge, Vanderyst B 220 p. p., 2061, 82, 9030 p. p., 33091 p. p., 43484 p. p.; Jamaica, Thaxter 7334 (F); — On *I. pes-caprae*, Brazil, Pontual in IMUR 310 (type of *M. pontualli*); — On *Hewittia sublobata*, Sierra Leone, Deighton 1364; — On *Calonyction aculeatum*, Sierra Leone, Deighton 2172; — On *C. bona-nox*, Porto Rico, Heller 6337 p. p.; — On *Merremia aegyptica*, Trinidad, ICTA 303; — On *M. glabra*, Trinidad, Stevens 897, ICTA 1375, 1706; — On *M. quinquefolia*, Venezuela, Muller 2039 (CUP); — On *Quamoclit coccinea*, Sierra Leone, Deighton 1456; — On *Rivea corymbosa*, San Domingo, Ekman 2798; — On *Argyreia hirsuta*, India, Herb. Crypt. Ind. Or. 1041; — On *A. capitata*, Java, BO 12078; — On *A. mollis*, Java, BO 12079; — On *Convolvulaceae* indet., Trinidad, Wakefield T278; Brazil, Ule, Herb. brasil. 188, 713. — On *Ipomoea indica*, Formosa, Yamamoto (USDA).

(1541) *Meliola clavulata* Wint. var. *batatae* Stev., Ann. Mycol. 26: 241. 1928.

Cols. epiphyllous, to 2 mm. diam. or confluent, thin to subdense. Hyphae sinuous, cells mostly 20—25×6—7 μ, branching alternate

or unilateral, acute, loosely to closely radiating-reticulate. Ch. alternate, more or less antrorse, straight, 11—14 μ long; stc. cylindric, 2—4 μ long; hc. globose, entire, 8—13 μ diam. Mh. separate, opposite or alternate, ampulliform, 12—15×6—8 μ. Ms. fairly numerous, scattered, straight, simple, obtuse, to 360×7—9 μ, apex not inflated. P. in loose central group, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 27—33×12—14×10—11 μ.

On *Ipomoea batatas*, British Guiana, Stevens 214 (type) 229, 632; Porto Rico, Whetzel 2588, Stevens 7297, SPEG 576; — On *I.* sp. indet., Costa Rica, Stevens 344, 855, 515, 348, 516; *I.* sp. indet., Costa Rica, Stevens 344, 855, 515, 348, 516; Panama, Stevens 1333, 536, 30, 1345, 616, 683, 529, 866, 1210, 392, 600; Ecuador, Stevens 107, 111, 125; Porto Rico, Heller 25, 1383 (F); —

On *Convolvulaceae* indet., Brazil, Ule, Herb. brasil. 968 (S).

(1542) *Meliola caymanensis* Ell. & Everh. in Millspaugh, Field Mus. Columb. Publ. Bot. Ser. 2: 43. 15. 1900.

I have not been able to locate type material of this species, for which Stevens in Ann. Mycol. 26: 243, 1928 gave the formula 3111.2231, stating that the setae are obtuse, to 230 μ long; on *Pharbitis cathartica*, Cayman Is. The only specimens I have encountered under this name are: (1) Ciferri, Mycofl. doming. exs. 251 on *Rivea (Stictocardia) campanulata*, San Domingo (CUP), which has the following characters, though it is possible it does not agree with the type, and seems referable to *M. clavulata* var. *batatae*: —

Cols. epiphyllous, 1 mm. diam., dense. Hyphae sinuous to tortuous, cells mostly 14—20 μ long, 5—7 μ thick, branching alternate or irregular at wide angles, closely reticulate with rounded meshes. Ch. alternate, antrorse, straight, 12—14 μ long; stc. cylindric, 2—4 μ long; hc. subglobose, entire or rounded-angulose, 9—12×9—11 μ. Mh. separate, opposite or alternate, ampulliform, 14—17×6—8 μ. Ms. fairly numerous, scattered and grouped around P., straight to slightly flexuous, simple, obtuse, to 280×7—8 μ. P. in loose central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—34×11—13 μ.

(2) On *Ipomoea* sp., Yucatan, Millspaugh 10 (USDA, det. Ellis) has characters similar to the above, but spores measure 32—37× 13—14 μ; this also belongs to *M. clavulata* var. *ipomoeae*.

(1543) *Meliola francevilleana* Gaill. var. *abbreviata* Cif., Mycopathologia 7: 129. 1954.

"Differs from type: ch. usually opposite, rarely alternate; setae straight, acute or subacute, not curved nor uncinate; P. larger, 250—330 μ diam.; sp. smaller, 30—37×9—15 μ."

On *Jacquemontia nodiflora*, San Domingo, Ekman 2821.

Specimens of this have not become available to the present author.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4230	Cols. subcrustose; hyphae straight to undulate; hc. ovate-cylindric, entire;	*peglerae*	(1544)

Meliola

3111.4222	Cols. dense; hyphae undulate to sinuous; hc. ovate, entire, large; ms. obtuse to subacute..	*ambigua*	(1545)
3111.3221	Cols. subdense; hyphae substraight; hc. ovate-cylindric, entire; ms. obtuse	*brandisiae*	(1546)
3111.3221	Cols. thin to subdense; hyphae undulate to sinuous; hc. ovate, entire; ms. obtuse	*maurandiae*	(1547)
3111.2221	Cols. dense; hyphae substraight to sinuous; hc. subglobose, entire; ms. obtuse	*microspora*	(1548)

(1544) *Asteridiella peglerae* (Doidge) Hansf., Sydowia 10: 49. 1957.
= *Meliola peglerae* Doidge, Trans. Roy. Soc. South Africa, 5: 730. 1917.
= *Irene peglerae* Doidge, South African Journ. Nat. Hist. 2: 40. 1920.

Cols. epiphyllous, subcrustose, to 3 mm. diam., smooth. Hyphae straight to undulate, cells 8—25×7—9 μ, branching opposite, acute, densely radiating-reticulate. Ch. alternate, antrorse, straight or bent 20—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate to cylindric, entire, 14—20×7—11 μ, often slightly bent. Mh. few, mostly alternate, separate in centre of colony, ampulliform, 14—22×7 μ. P. in central group, verrucose, to 235 μ diam., surface cells mammillate, to 12 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 29—43×16—18 μ.

On *Anastrabe integerrima*, South Africa, Pegler 2363 (type), PRET 9036; — On *Bowkeria triphylla*, South Africa, PRET 11572; — On *Halleria elliptica*, South Africa, PRET 10932; — On *H. lucida*, Africa, PRET 17116, 17182, 17200, 32118.

(1545) *Meliola ambigua* Pat. & Gaill., Bull. Soc. Myc. Fr. 4: 104. 1888.

Cols. epiphyllous, to 2 mm. diam., numerous, not usually confluent, dense. Hyphae slightly undulate to sinuous, cells mostly 20—25×7—9 μ, branching alternate or irregular, acute, closely reticulate. Ch. alternate, rather closely antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. ovate, entire, rounded at apex, 14—20×9—13 μ. Mh. few, usually on short, separate hyphae in centre of older colonies, opposite or alternate, ampulliform, straight or bent, 15—23×6—9 μ. Ms. closely scattered, straight or slightly bent, obtuse to subacute, 220—280×7—9 μ. P. in close central group, verrucose, to 180 μ diam., surface cells rounded

to obtuse conoid. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—43×12—15 μ.

On *Scrophulariaceae* indet., Brazil, Rick 549 (S).

(Other specimens of this species are described below under Host Family Verbenaceae).

(1546) *Meliola brandisiae* Hansf., Farlowia **3**: 275. 1948.

Cols. epiphyllous, subdense, to 4 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 20—30×7—8 μ, branching opposite, wide, closely reticulate. Ch. alternate, usually straight, 18—28 μ long; more or less antrorse; stc. slightly cuneate, 6—10 μ long; hc. ovate to clavate-cylindric, entire, broadly rounded at apex, 12—19×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. fairly numerous, scattered and grouped around P., straight, simple, obtuse, to 300×6—7 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 34—40×13—16 μ.

On *Brandisia* sp., China, Cheo 1624, type (F).

(1547) *Meliola maurandiae* Hansf., Sydowia Beih. **1**: 112. 1957.

Cols. epiphyllous, closely scattered, to 1 mm. diam., thin to subdense. Hyphae undulate to sinuous, cells mostly about 20×6—7 μ, branching opposite or irregular at wide angles, loosely to rather closely radiating-reticulate with rounded meshes. Ch. alternate, more or less antrorse, straight, 15—20 μ long; stc. cuneate, 4—7 μ long; hc. ovate, rounded to somewhat pointed at apex, entire, 11—14×6—9 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—18×6—7 μ. Ms. few, scattered and grouped around P., straight or somewhat flexuous, simple, obtuse, to 250×7—8 μ. P. in loose central group, nearly smooth, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—33×11—12 μ.

On *Maurandia erubescens*, Jamaica, Martyn in IMI 34802, type. — On *M. scandens*, Jamaica, Maxon & Killip 1236 (F). — On *Scrophulariaceae* indet., Borneo, Clemens in BM.

(1548) *Meliola microspora* Pat. & Gaill., Bull. Soc. Myc. Fr. **4**: 104. 1888.

= *Meliola ulei* Hansf., Proc. Linn. Soc. London **160**: 132. 1948.

Cols. amphigenous and caulicolous, dense, to 1 mm. diam. or widely confluent. Hyphae substraight to undulate or sinuous, cells mostly 15—20×5—7 μ, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, usually atraight, 10—13 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 7—10×6—10 μ. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform, 10—16×6—7 μ. Ms. few, scattered, straight or flexuous, not uncinate, simple, obtuse, to 180×6—7 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 25—29×9—11 μ.

On *Vandellia diffusa*, Venezuela, Gaillard, Champ. Haut-Orenoque 262, type (S); Brazil, Ule, Mycoth. brasil 61 (S); — On *Ilysanthes ruelloides*, ? Java, BO 4913.

The host of the type was given originally as "probably Labiatae", but has now been determined in Herb. Kew.

Host Family 256. Gesneriaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220	Cols. thin; hyphae undulate to tortuous; hc. ovate or sublobate; ps. 2—12, obtuse, to 180 μ	*fieldiae*	(1549)

Asteridiella

3101.4220	Cols. thin to subdense; hyphae sinuous; hc. ovate-piriform or angulose	*cyrtandrae*	(1550)

Meliola

31¾3.4222	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate-oblong, entire, small; ms. acute or furcate-dentate	*wismarensis* var. *besleriae*	(1551)
3111.3222	Cols. dense; hyphae undulate; hc. ovate-globose, entire; ms. acute	*gesneriae*	(1552)
3111.3222	Cols. thin; hyphae undulate; hc. ovatepiriform, entire; ms. obtuse	*epithemae*	(1553)
3111.3221	Cols. dense; hyphae sinuous; hc. globose, or subangulose; ms. obtuse	*pumila*	(1554)
3111.3221	Cols. thin; hyphae sinuous to tortuous; hc. globose-ovate, entire; ms. obtuse	*besleriae*	(1555)
3111.2121	Cols. subdense; hyphae sinuous to tortuous; hc. globose-ovate, entire; ms. obtuse.....	*columneae*	(1556)

(1549) *Irenopsis fieldiae* Hansf., Proc. Linn. Soc. N.S.W. 78: 58. 1953.

Cols. epiphyllous, closely scattered, to 1 mm. diam., thin, smooth. Hyphae undulate, cells mostly 15—30×7—8 μ, branching opposite or irregular, at varying angles, loosely reticulate. Ch. alternate (very rarely opposite), more or less antrorse, straight or bent, 17—25 μ long; stc. cylindric to cuneate, 4—9 μ long; hc. ovate and entire, or usually shallowly rounded-lobate and irregular, versiform, 14—18×9—14 μ. Mh. separate, opposite, ampulliform, 13—18×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam.; ps. 2—12, from upper half of P., more or less straight, simple, obtuse to subacute,3—4-septate, dark brown, to 180×7—8 μ, attenuate upwards, smooth, apparently continuous. Sp. oblong, obtuse, 4-septate, constricted, 32—39×13—15 μ.

On *Fieldia australis*, New South Wales, Fraser 5 (type), 190,210.

(1550) **Asteridiella cyrtandrae** (Stev.) Hansf., comb. n.

(3101.4220)

= *Meliola cyrtandrae* Stev., Bishop Mus. Bull. **19**: 44. 1925.

= *Irenina cyrtandrae* Stev., Ann. Mycol. **25**: 465. 1927.

Cols. amphigenous, 1—2 mm. diam., thin to subdense. Hyphae undulate to sinuous, cells mostly 17—35×6—8 μ, branching opposite or irregular, at wide angles, loosely reticulate. Ch. alternate, more or less antrorse, usually bent, 20—29 μ long; stc. cylindric, to cuneate, 5—9 μ long; hc. subglobose, ovate or piriform, entire or slightly rounded-angulose, 12—19×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform. P. in central group, few, verrucose, to 170 μ diam., surface cells rounded, slightly projecting. Sp. cylindric, obtuse, 4-septate, constricted, 35—43×15—18 μ.

On *Cyrtandra lessoniana*, Hawaii, Stevens 481, type (FLS, F); — On *C. cordifolia*, Hawaii, Stevens 793.

(1551) *Meliola wismarensis* Stev. var. *besleriae* Hansf., Sydowia 11: 62. 1958.

Cols. amphigenous, velvety, dense, to 5 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite at wide angles, cells mostly 15—30×5—7 μ, loosely to closely reticulate with subrectangular meshes. Ch. alternate or opposite, antrorse or spreading, straight or bent, 11—16 μ long; stc. cylindric, 2—5 μ long; hc. ovate to cylindric with rounded apex, entire, 8—12×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—9 μ. Ms. numerous, scattered, straight or somewhat flexuous, to 310×9—11 μ, apex simple and acute, or more usually 2—3-dentate (—12 μ), or 2-furcate (—25 μ) with dentate branches. P. scattered, verrucose to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—42×15—17×13—14 μ.

On *Besleria umbrosa*, Brazil, Ule, Herb. brasil. 2408, type (S, F).

(1552) *Meliola gesneriae* Stev., Illinois Biol. Monogr. 2: 515. 1916.

Cols. hypophyllous, to 8 mm. diam., dense. Hyphae undulate to flexuous, cells mostly 20—30×5—7 μ, branching opposite at wide angles, becoming closely reticulate. Ch. alternate, antrorse, straight or bent, 14—19 μ long; stc. cuneate to cylindric, 3—5 μ long; hc. ovate to globose, entire, 9—14×9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—20×6—9 μ. Ms. mostly grouped around P., straight or slightly bent, simple, acute, to 400×7 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 30—35×13—15 μ.

On *Gesneria albiflora*, Porto Rico, Stevens 7431, type, 7465, 6590, 8018.

(1553) *Meliola epithemae* Stev. & Rold., Philipp. Journ. Sci. 56: 65. 1935.

Cols. amphigenous, thin, to 1 mm. diam. or confluent. Hyphae

undulate, branching alternate or irregular, at acute angles, becoming closely reticulate, cells mostly 20—30×5—7 μ. Ch. alternate, antrorse, straight or slightly bent, 14—21 μ long; stc. cuneate, 3—6 μ long; hc. ovate to piriform, entire, 10—15×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—7 μ. Ms. scattered and grouped around P., straight, simple, obtuse, to 360×8 μ. P. subaggregate in centre of colony, slightly verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—33×10—11 μ.

On *Epithema* sp., Philippines, Stevens 1394, type (FLS); — On *Isanthera discolor*, Philippines, Stevens 1737.

(1554) *Meliola pumila* Syd., Leafl. Philipp. Bot. 9: 3119. 1925.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae sinuous to undulate, cells mostly 15—20×7—8 μ, branching close, usually opposite at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, usually straight, 16—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose, entire or slightly rounded-angulose, 11—15×10—14 μ. Mh. mixed with ch., few, opposite or alternate, ampu..iform, 14—20×7—8 μ. Ms. thinly scattered, straight, simple, obtuse, to 330×8—9 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 26—31×13—14 μ

On *Boea pseudoglandulosa*, Philippines, PBS 17411, type; — On *Cyrtandra picta*, Java, BO 12546, 13213, 17413; — On *C. sandei*, Java, BO 13367; — On *C. repens*, Java, BO 12426.

(1555) *Meliola besleriae* Hansf., Sydowia 9: 9. 1955.

Cols. hypophyllous, thin, to 6 mm. diam. or confluent, slightly velvety. Hyphae sinuous to tortuous, cells mostly 20—35×4—6 μ, branching opposite or irregular, at variable angles, loosely interwoven-reticulate. Ch. alternate or more scattered, antrorse, straight, 12—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose to ovate, rounded or somewhat pointed at apex, 9—16×7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—20×6—8 μ. Ms. loosely scattered, straight or slightly bent, simple, obtuse, to 280×6—7 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted slightly, 26—32×9—11 μ.

On *Besleria longipes*, Trinidad, Baker in Herb. Kew (= IMI 45877).

(1556) *Meliola columneae* Stev., Ann. Mycol. 26: 247. 1928.

Cols. hypophyllous, subdense, 2—5 mm. diam. Hyphae sinuous to tortuous, cells mostly 13—25×4,5—6 μ, branching opposite or irregular, acute, becoming closely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 9—13 μ long; stc. cylindric, 2—4 μ long; hc. subglobose to ovate, entire, 8—10×7—9 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Ms. scattered, fairly numerous, simple, obtuse, straight, to 220×6—8 μ. P. scattered, nearly smooth,

to 130 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 25—29×8—9 μ.

On *Columnea heterophylla*, Costa Rica, Stevens 677, type.

Host Family 257. Bignoniaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3301.3221	Cols. thin; hyphae substraight; hc. subglobose, entire; ps. 0—6, obtuse, uncinate or coiled above, to 70 μ long	*brasiliensis*	(1557)

Asteridiella

3101.4230	Cols. dense; hyphae substraight; hc. ovate, entire, large	*amphilophii*	(1558)
3101.4220	Cols. thin; hyphae substraight; hc. angulose to sublobate, large	*schlegeliae*	(1559)
3101.4230	Cols. subdense; hyphae substraight; hc. subglobose, entire, smaller	*arachnoidea*	(1560)
3101.3220	Cols. thin; hyphae undulate; hc. ovate entire, elongate	*crescentiicola*	(1561)
3101.3220	Cols. dense; hyphae sinuous; hc. ovate-globose, entire	*tabebuiae*	(1562)
3101.3220	Cols. thin; hyphae undulate; hc. ovate-globose, small, entire	*peruviana*	(1563)

Meliola

3142.4231	Cols. dense; hyphae substraight; hc. ovate-cylindric, entire; ms. 2—3-furcate-dentate	*hariotii*	(1564)
3141.4221	Cols. thin; hyphae straight; hc. ovoid-oblong, entire or angulose; ms. 1—2-dichotomous to 190 μ, tips obtuse	*tumor*	(1565)
3141.4221	Cols. dense; hyphae substraight; hc. ovate-oblong, crenate-angulose; ms. 3-dichotomous, tips acute	*distictidis*	(1566)
3141.3221	Cols. thin; hyphae substraight to crooked; hc. subglobose-oblong, entire; ms. variously furcate-dentate to 30 μ	*lundiae*	(1567)
31¾1.4221	Cols. dense, velvety; hyphae substraight; hc. oblong-ovate, entire; ms. cristate-furcate to 10 μ	*herteri*	(1568)
31¾1.3221	Cols. subdense, velvety; hyphae substraight to undulate; hc. ovate-piriform, entire; ms. cristate-dentate	*bignoniacearum*	(1969)
31¾1.3221	Cols. subdense, strongly parasitic, subvelvety; hyphae substraight to undulate; hc. ovate or angulose; ms. dense cristate-dentate	*bignoniacearum* var. *parasitica*	(1670)
3131.4322	Cols. thin to subdense; hyphae substraight; hc. oblong, entire; ms. 2—5-dentate	*bignoniacearum* var. *weigeltii*	(1571)

3131.5222 Cols. dense, velvety; hyphae undulate to crooked; hc. cylindric, entire, large; ms. 2—4-dentate ..... *kigeliae* (1572)

3131.3221 Cols. minute, dense, velvety; hyphae sinuous to tortuous; hc. globose-ovate, entire; ms. cristate-dentate ..... *dentifera* (1573)

3131.3221 Cols. subdense, velvety; hyphae substraight; hc. globose-oblong or subangulose; ms. contorted above, dentate ..... *mandingensis* (1574)

3133.3221 Cols. thin; hyphae substraight to crooked; hc. globose-ovate, entire; ms. 2—3-dentate .. *thaxteri* (1575)

3133.3221 Cols. very thin; hyphae substraight to undulate; hc. oblong, entire; ms. few, 2—3-dentate *bignoniacearum* var. *tenuis* (1576)

3133.3221 Cols. subdense, velvety; hyphae substraight; hc. subglobose-oblong or angulose; ms. 2—3-dentate ..... *rockstonensis* (1577)

31⅓1.3221 Cols. subdense; hyphae crooked; hc. ovate-oblong, angulose to sublobate; ms. obtuse or 2—4-dentate ..... *bignoniacearum* var. *irregularis* (1578)

31⅓1.4222 Cols. dense, velvety; hyphae straight; hc. ovate-clavate, entire; ms. acute or 2-dentate *bidentata* (1579)

3131.3223 Cols. . . .; ms. furcate, crenulate and dentate *cydistae* var. *aequinoctialis* (1580)

3131.3222 Cols. thin to subdense; hyphae substraight; hc. ovate, entire; ms. 2—4-dentate ..... *bidentata* var. *minor* (1581)

3131.3221 Cols. dense; hyphae straight; hc. ovate, entire; ms. cristate-dentate ..... *cydistae* (1582)

3131.3221 Cols. thin; hyphae substraight; hc. narrow ovate-cylindric, entire; ms. 2—6-dentate .... *bignoniacearum* var. *tabebuiae* (1583)

31⅓3.3223 Cols. dense; hyphae substraight; hc. ovate-globose, entire; ms. acute or 2—3-dentate .. *newbouldiae* (1584)

31⅓1.4221 Cols. subdense; hyphae substraight; hc. ovate-cylindric, entire; ms. obtuse or multidentate *bignoniacearum* var. *major* (1585)

31⅓1.3221 Cols. thin, small; hyphae substraight; hc. globose-ovate, entire; ms. obtuse or 2-dentate *gnathonella* (1586)

3121.4321 Cols. subdense; hyphae tortuous; hc. ovate to subglobose, angulose to sublobate; ms. obtuse, uncinate to coiled above ..... *torulosiseta* (1587)

3121.4221 Cols. dense, velvety; hyphae straight to sinuous; hc. subglobose-ovate, entire; ms. uncinate or irregularly bent, obtuse ..... *ophidiochaeta* (1588)

3121.4221 Cols. subdense, subvelvety; hyphae straight; hc. ovate-cylindric, entire; ms. uncinate to coiled, obtuse ..... *tecomae* (1589)

3121.3221 Cols. dense, subcrustose, velvety; hyphae substraight; hc. ovate-clavate, entire; ms. irregularly bent, uncinate or coiled, obtuse .. *kampalense* (1590)

3113.3221 Cols. dense; hyphae undulate; hc. globose, entire; ms. obtuse ..... *manaosellae* (1591)

3111.4232	Cols. dense, velvety; hyphae substraight; hc. globose-clavate, entire; ms. acute	*lanceolata-setosa*	(1592)
311.4231	Cols. thin to subdense; hyphae sinouus to tortuous; hc. irregularly lobate; ms. obtuse ..	*asperipoda*	(1593)
3111.3222	Cols. thin, subvelvety; hyphae undulate; hc. hc. ovate, entire; ms. obtuse.....	*markhamiae*	(1594)
3111.3222	Cols. subdense, velvety; hyphae undulate; hc. ovate, entire; ms. obtuse, often torulose below apex and sometimes bent	*standleyi*	(1595)
3111.3221	Cols. dense; hyphae substraight; hc. globose-ovoid, entire; ms. obtuse	*crescentiae*	(1596)
3111.3221	Cols. thin to subdense; hyphae undulate; hc. subglobose, entire; ms. obtuse to clavulate ..	*arrabidaeae*	(1597)
3111.3121	Cols. thin to subdense; hyphae sinuous; hc. subglobose-ovate, entire; ms. obtuse	*arrabidaeae* var. *irregularis*	(1598)

(1557) **Irenopsis brasiliensis** (Speg.) Hansf., comb. n.

= *Meliola brasiliensis* Speg., Anal. Soc. Cient. Argentina, **12**: no. 116. 1881.

= *Irenopsis bignoniacearum* Stev., Ann. Mycol. **25**: 442. 1927.

= *Meliola shropshiriana* Stev., l. c., 26: 243. 1928.

Cols. epiphyllous, thin, smooth, to 1 mm. diam., usually widely confluent. Hyphae substraight to slightly undulate, branching opposite, acute to wide, loosely reticulate, cells mostly 25—30×6 μ. Ch. alternate, antrorse, usually straight, 15—18 μ long (in type specimen very rarely opposite); stc. cylindric to cuneate, 3—5 μ long; hc. subglobose, entire, 11—14×10—13 μ. Mh. separate or mixed with a few ch., opposite or alternate, ampulliform, 15—18×6—8 μ. P. loosely scattered, each on a radiate, loose, hypophodiate subiculum, slightly verrucose, to 170 μ diam.; ps. 0—6, arising from upper half of P., erect-spreading, 0—2-septate, to 70×7—8 μ, obtuse, uncinate or rarely somewhat coiled at apex, where sometimes swollen to 11 μ, wall smooth, 1—2,5 μ thick. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 30—37×14—17 μ.

On *Bignoniaceae* indet., Brazil, Puiggari 1551 (SPEG 543, 522, type); Usteri 24, 25, 102 (= SPEG 564), 6 (= SPEG 565); Panama, Stevens 81 (type of *I. bignoniacearum*) 83; 115 (type of *M. shropshiriana*), 110, 153, 169; — On *Anemopaegma prostratum*, Brazil, Usteri 19 (S); — On *Pyrostegia venusta*, Brazil, Pickel in Herb. Inst. Biol. S. Paulo 3012.

(1558) *Asteridiella amphilophii* Hansf., Sydowia **10**: 46. 1957.

= *Irene amphilophii* Hansf., Sydowia **9**: 53. 1955.

Cols. epiphyllous, to 1,5 mm diam., dense. smooth. Hyphae substraight to slightly undulate, cells mostly 25—30×7—8 μ, branching alternate or irregular, acute, closely radiating-reticulate. Ch. alternate, somewhat antrorse, usually straight, 26—38 μ long; stc.

cuneate, 10—15 μ long; hc. ovate, entire, attenuate-rounded at apex, 18—24×10—12 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform, 16—25×6—8 μ, neck elongate. P. in central group, slightly verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 36—42×14—15 μ.

On *Amphilophium vauthieri*, Brazil, Theissen in Rehm, Ascomyc. 1824, type (sub *M. plebeja*).

(1559) *Asteridiella schlegeliae* (Stev.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola glabroides* Stev. var. *schlegeliae* Stev., Illinois Biol. Monogr. **2**: 20. 1916.

= *Irenina glabroides* Stev. var. *schlegeliae* Stev., Ann. Mycol. **25**: 464. 1927.

= *Irenina schlegeliae* (Stev.) Hansf., Proc. Linn. Soc. London **160**: 132. 1948.

Cols. amphigenous, thin, smooth, usually confluent over the leaf. Hyphae substraight, cells mostly 30—50×6—7 μ, branching opposite, alternate or irregular, acute, very loosely reticulate. Ch. alternate or more scattered, spreading, straight or bent, 19—30 μ long; stc. cuneate to cylindric, straight or bent, 7—11 μ long; hc. irregularly rounded-angulose to shallowly lobate, 13—21×10—20 μ. Mh. separate, alternate or opposite, ampulliform, 15—23×6—9 μ, nick elongate. P. loosely scattered, verrucose, to 170 μ diam., surface cells obtusely conoid, to 20 μ high by about 30 μ diam. at base. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 38—46×16—20 μ.

On *Schlegelia* sp., Porto Rico, Stevens 8289 (type), 8274.

(1560) *Asteridiella arachnoidea* (Speg.) Hansf., Sydowia **10**: 46. 1957.

= *Meliola arachnoidea* Speg., Bol. Acad. Cient. Corboda, **11**: 381. 1889.

= *Irene arachnoidea* (Speg.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

= *Irenina arachnoidea* (Speg.) Stev., l. c., **25**: 456. 1927.

Cols. epiphyllous, subdense, smooth, to 3 mm. diam. Hyphae substraight, cells mostly 20—35×6—7 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate (less than 1% opposite), 15—19 μ long; straight, antrorse or spreading; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose, entire, 12—15×9—13 μ P. scattered, each on close subiculum of hyphopodiate hyphae to 100 μ long, verrucose, to 250 μ diam., surface cells rounded to conoid. Sp. ellipsoid, 4-septate, obtuse, rather deeply constricted, 38—43×17—19 μ.

On *Bignoniaceae* indet., Brazil, Balansa, type; Usteri 17 (S).

(1561) *Asteridiella crescentiicola* Hansf., Sydowia **10**: 53. 1957.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. Hyphae undulate, cells mostly 20—25×7—8 μ, branching opposite at acute angles,

loosely reticulate. Ch. alternate, antrorse, straight or bent, 24—30 μ long; stc. cuneate or cylindric, 5—11 μ long; hc. long ovate, entire, rounded at apex, 16—23×9—12 μ. Mh. separate, opposite or alternate, ampulliform, 16—25×7—9 μ. P. scattered, verrucose, to 180 μ diam., surface cells rounded to obtusely conoid, to 15 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 33—37×15—17 μ.

On *Crescentia cujete*, Venezuela, Chardon & Toro 526 (CUP).

(1562) *Asteridiella tabebuiae* (Batista & Silva) Hansf., Sydowia 10: 50. 1957.

= *Irenina tabebuiae* Batista & Silva, Anal. IV Congr. Soc. Bot. Brazil, p. 96. 1953.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae sinuous, cells mostly 15—22×6—7 μ, branching opposite or irregular at acute angles, closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 12—17 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, ovate or clavulate, entire, 8—13×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—8 μ. P. in central group or sometimes scattered, verrucose, to 170 μ diam., surface cells conoid, to 12 μ high. Sp. oblong, obtuse, 4-septate, constricted, 26—33×10—12 μ.

On *Tabebuia ipe*, Brazil, Vital in IMUR 1209, Lopes in Inst. Pesq. Pernambuco 3636, type.

(1563) *Asteridiella peruviana* (Syd.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola peruviana* Syd., Ann. Mycol. 14: 75. 1916.

= *Irene peruviana* (Syd.) Hansf., Sydowia **9**: 56. 1955.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. or confluent. Hyphae more or less undulate, cells mostly 20—25×5—7 μ, branching opposite at wide angles, lossely reticulate. Ch. alternate, antrorse or spreading, straight or slightly bent, 12—17 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to widely ovate, entire, 9—12×7—10 μ. Mh. mixed with ch., opposite or alternate, bent ampulliform, 13—17×5—8 μ. P. loosely scattered, verrucose, to 170 μ diam., surface cells obtusely conoid, to 12 μ high. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—34×10—12 μ.

On *Bignoniaceae* indet., Peru, Ule, Herb. brasil. 3452, type (S, ex Sydow).

In the original description Sydow included mycelial setae, as "very few, straight or substraight, simple, obtuse. pellucid throughout their length, 100—175×7—9 μ, slightly tortuous above". The present author failed to find these in the specimen, and it is possible that they were conidiophores of *Helminthosporium* sp.

(1564) *Meliola hariotii* Speg., Rev. Argent. Hist. Nat., Buenos Aires, **1**: 78. 1891.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae substraight, cells 12—30×7—8 μ, branching opposite, acute, densely reticulate.

Ch. opposite save where too crowded, spreading or antrorse, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovate to cylindric, entire, 10—15×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7—8 μ. Ms. scattered thinly, and grouped around P., to 280×7—9 μ, apex 2—3-dentate, or very shortly 2—3-furcate with dentate branches to 15 μ long. P. scattered, verrucose, to 220 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 39—46×16—20 μ.

On *Bignoniaceae* indet., Paraguay, Balansa 1291, type (SPEG, P, K).

(1565) *Meliola tumor* Stev., Ann. Mycol. **26**: 179. 1928.

Cols. amphigenous, usually epiphyllous, thin, effuse over most of leaf. Hyphae straight, cells mostly 30—50×8—9 μ, branching opposite, acute, loosely to rather closely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 25—39 μ long; stc. cylindric to cuneate, 7—14 μ long; hc. ovoid, piriform or oblong, entire or sometimes slightly rounded-angulose, 19—28×13—20 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 19—24×8—10 μ. Ms. scattered, straight below, to 280×10—11 μ, 1—2-dichotomous above, the branches straight, widely spreading, up to 190 μ long, tips swollen to 12—14 μ and sometimes minutely roughened. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, deeply constricted, 47—54×18—21 μ.

On *Bignoniaceae* indet., British Guiana, Stevens 422, type.

(1566) *Meliola distictidis* Hansf., Proc. Linn. Soc. London **160**: 132. 1948.

Cols. amphigenous, mostly epiphyllous, dense, to 3 mm. diam., velvety. Hyphae substraight, cells mostly 30—40×6—7 μ, branching opposite, acute, closely reticulate. Ch. alternate, more or less antrorse, usually straight, 22—30 μ long; stc. cuneate to cylindric, 6—13 μ long; hc. rarely subglobose, usually cylindric to ovate with undulate, crenulate or irregularly angulose margin, 12—20×11—15 μ. Mh. separate, opposite, ampulliform, 20—28×6—8 μ, neck elongate. Ms. numerous, closely scattered, straight, to 260×8—9 μ, apex usually 3-dichotomous, the branches spreading, horizontal, 1-ry to 15 μ, 2-ry to 30 μ, 3-ry to 15 μ, acute. P. closely scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—41×15—16 μ.

On *Distictis lactiflora*, San Domingo. Ciferri, Mycofl. doming. esx. 48, type; Porto Rico. Whetzel 3292 (CUP).

(1567) *Meliola lundiae* Stev., Ann. Mycol. **26**: 179. 1928.

Cols. epiphyllous, thin, to 3 mm. diam. Hyphae substraight to undulate or crooked, branching opposite at wide angles, loosely reticulate, cells mostly 15—20×5—6 μ. Ch. alternate or rarely opposite, spreading, straight or slightly bent, 12—15 μ long; stc. cylindric,

2—5 μ long; hc. subglobose to ovate or oblong, entire, 8—11×6—8 μ. Mh. mixed with ch., alternate or opposite, rarely ternate, ampulliform, 13—18×6—7 μ. Ms. few, mostly grouped around P., straight, to 180×7 μ, apex irregularly dentate to 4 μ, or variously branched to 30 μ, the branches irregularly curved and dentate, mostly 3 μ thick. P. scattered, globose, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—34×12—14 μ.

On *Lundia umbrosa*, Ecuador, Stevens 321, type (FLS, F).

(1568) *Meliola herteri* Hansf., Sydowia **9**: 65. 1955.

Cols. amphigenous, dense, velvety, to 2 mm. diam. Hyphae substraight, cells mostly 15—25×7—9 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, antrorse, more or less straight, 20—28 μ long; stc. cuneate to cylindric, 5—9 μ long; hc. cylindric with widely rounded apex, entire, less commonly ovate and somewhat pointed at apex, 15—20×9—12 μ. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform, 15—25×7—9 μ. Ms. numerous, scattered, straight, to 240×7—9 μ, the apex usually 2—4-furcate to 10 μ. and the branches 2—3-dentate to 10 μ, the whole more or less cristate. P. scattered or loosely gregarious in centre of colony, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—45×15—18 μ.

On *Bignonia unguis-cati*, Paraguay, Herter 85137 (type, F); — On *Amphilophium vauthieri*, Argentina, SPEG 1809-a, 1809-b. — On *Parabignonia maximiliana*, Brazil, Moser in Herb. Hoehnel (F).

(1569) *Meliola bignoniacearum* Stev., Ann. Mycol. **26**: 196. 1928.

Cols. amphigenous, velvety, subdense, to 4 mm. diam. or widely confluent. Hyphae substraight to undulate, cells mostly 20—25×6 μ, branching opposite at acute angles, losely reticulate. Ch. alternate, antrorse or spreading, usually straight 15—22 μ, long; stc. cylindric to cuneate, 3—9 μ long; hc. ovate to piriform, broadly rounded to slightly pointed at apex, entire, 10—14×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—18×6—8 μ. Ms. numerous, straight, to 300×7—8 μ, apex cristate-dentate or sometimes very shortly 2-furcate to 10 μ with dentate branches, teeth to 12 μ long. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—36×12—14 μ.

On *Bignoniaceae* indet., Panama, Stevens 925 (type), 94, 1160, 407, 1059. 1110, 371, 1081, 608, 658, 1256, 83 (FLS, F); Brazil, Ule, Herb. brasil. 1219, 2533 (S, K); Panama, Stevens 1323, Standley 30094 (F); — On *Arrabidaea* sp., Panama, Stevens 759; Bolivia, Steinbach 2272 (SPEG); — On *Adenocalymma* sp., Ecuador, Stevens 77; — On *Bignonia* sp., Florida, Nash, Plants of Florida 2334 (S, K); — On *Tabebuia* sp., Ecuador, Stevens 76, with setae approaching those of *M. cydistae*. — On *Plenotoma diversifolia*, Venezuela, Sydow, Fung. exot. exs. 790.

(1570) *Meliola bignoniacearum* Stev. var. *parasitica* Hansf., Sydowia **9**: 60. 1955.

Cols. epiphyllous, subdense, to 1,5 mm. diam., each in centre of yellow to red-brown leafspot, showing on lower surface of leaf; somewhat velvety. Hyphae substraight to undulate, cells 15—20×5—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, slightly antrorse, straight or bent, 15—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate, rounded or somewhat pointed at apex, entire or slightly rounded-angulose, 12—15×8—11 μ. Mh. mixed with ch., in centre of colony, opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. scattered and grouped around P., straight, to 250×7—9 μ, apex with 2—4 branches to 25 μ long (usually about 10 μ) and each with many divergent teeth to 10 μ, the whole cristate and dense. P. scattered or subaggregate in centre of colony, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×14—16×12—14 μ.

On *Bignoniaceae* indet., Ecuador, Stevens 82 (type); Trinidad, Thaxter 7493 (F).

(1571) *Meliola bignoniacearum* Stev. var. **weigeltii** Hansf., var. n.

Cols. epiphyllous, thin to subdense. Hyphae straight to slightly undulate, cells 20—30×6—7 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate, subantrorse, straight or slightly bent, 17—24 μ long; stc. cylindric, 4—8 μ long; hc. oblong, entire, 13—18×6—8 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×6—8 μ. Ms. thinly scattered, mostly grouped around P., straight, to 350×7—9 μ, apex 2—5-dentate to 10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric to ellipsoid obtuse, 4-septate, constricted, 40—48×18—23 μ, the middle cell sometimes distinctly the largest.

On *Spathodea bracteosa* (*"Bignonia alba"*), Surinam, Weigelt in Herb. Berlin, sub *"Bryocladium weigeltii* Kunze "ined.

(1572) *Meliola kigeliae* Hansf., Sydowia **9**: 18. 1955.

Cols. hypophyllous, dense, velvety, to 3 mm. diam., usually numerous and confluent. Hyphae undulate to crooked, cells mostly 30—40×7—8 μ, branching opposite or irregular, at wide angles, closely reticulate. Ch. alternate, straight or much bent, 20—33 μ long; stc. cylindric, 4—13 μ long; hc. cylindric with rounded apex, entire, often bent, 15—21×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×7—9 μ. Ms. scattered and grouped around P., straight, to 480×7—9 μ, apex 2—4-dentate, sometimes the teeth again dentate, to 17 μ long. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—51×16—18×13—15 μ.

Kigelia moosa, Uganda, Dummer 2829, type (K).

(1573) *Meliola dentifera* Syd., Ann. Mycol. 14: 78. 1916.

Cols. hypophyllous, minute to 2 mm. diam., dense, velvety,

not confluent. Hyphae sinuous to tortuous, cells mostly 15—20×6—7 μ, branching opposite or irregular at wide angles, densely reticulate-interwoven. Ch. alternate, usually straight, antrorse or spreading, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. globose to widely ovate, entire, 10—12×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—20×6—8 μ. Ms. numerous, straight, to 220×8—11 μ, opaque black, apex with 3—6 short, suberect branches to 12 μ long, each 2—3-dentate to 3 μ, the whole densely cristate. P. aggregate in centre of colony, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—32×11—13 μ.

On *Arrabidaea* sp., Brazil, Ule, Herb. Brasil. 3528, type (S); — On *A. mollis*, Trinidad, Baker in IMI 27671, with thinner, epiphyllous cols. and looser branching of ms.; — On *Bignoniaceae* indet., Trinidad, Baker in IMI 27664, with cols. amphigenous.

(1574) *Meliola mandingensis* Hansf., Sydowia Beih. **1**: 112. 1957.

Cols. epiphyllous, subdense, velvety, to 5 mm. diam. Hyphae substraight to undulate, branching opposite or irregular at wide angles, cells mostly 20—25×7 μ, becoming closely reticulate in centre. Ch. alternate or about 1% opposite, straight or variously bent, antrorse or spreading, 16—30 μ long; stc. cuneate to cylindric, 3—11 μ long; hc. globose to oblong, often bent, entire or slightly rounded-angulose, 11—19×10—13 μ. Mh. separate on straight hyphae growing out beyond the edge of the colony, with cells 35—45 μ long, opposite or alternate, ampulliform, 14—18×7—9 μ. Ms. numerous, scattered and grouped around P., substraight below, to 200×8 μ, apex irregularly contorted to geniculate and dentate to 12 μ. P. scattered, verrucose, to 145 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—39×13—15×11 μ.

On *Bignoniaceae* indet., Panama, Stevens 1339, type.

(1575) **Meliola thaxteri** Hansf., nom. n.

= *Meliola stevensiana* Hansf., Sydowia **9**: 76. 1955, non Ciferri, 1954.

Cols. epiphyllous, to 3 mm. diam. or sometimes confluent, thin. Hyphae substraight to undulate or crooked, cells mostly 20—40×5—7 μ, branching opposite, at wide angles, loosely interwoven-reticulate. Ch. alternate or about 5% opposite, straight or bent, spreading, 10—15 μ long; stc. cylindric, 2—5 μ long; hc. subglobose, wide ovate or bent, entire, rounded at apex, 8—12×8—11 μ. Mh. mixed with ch. alternate, or opposite, ampulliform, 17—25×6—8 μ, neck elongate. Ms. thinly scattered and grouped around P., substraight, to 250×7—8 μ. apex rarely simple and acute, more usually 2—3-dentate to 15 μ, all setae rough with minute lateral teeth. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 33—37×13—15×11—13 μ.

On *Bignoniaceae* indet., Ecuador, Stevens 82 p. p., type (F, FLS); Trinidad, Thaxter 7510 (F); — On *Bignonia unguis-cati*, Trinidad, Thaxter 7459, 7458 (F).

In the type collection this is mixed with *M. bignoniacearum* var. *parasitica*, from which it is easily distinguished by its much thinner colonies, not causing leafspots.

Cols. mostly hypophyllous, very thin and scarcely visible, to 3 mm. diam. or confluent. Hyphae substraight to undulate, branching opposite, acute, loosely reticulate, cells mostly 20—40×5—6 μ. Ch. alternate or to 10% opposite, subantrorse or spreading, often bent, 13—19 μ long; stc. cylindric, 3—6 μ long; hc. oblong to piriform, often bent, 10—13×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—28×7—8 μ, neck elongate. Ms. few, grouped around P., straight, to 250×5—6 μ, apex simple and acute, or usually 2—3-dentate to 10 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—33×9—13 μ.

On *Bignoniaceae* indet., British Guiana, Stevens 249 p. p., type.

(1577) *Meliola rockstonensis* Hansf., Sydowia Beih. **1**: 115. 1957.

Cols. hypophyllous, to 5 mm. diam., subdense, velvety. Hyphae substraight or finely undulate, branching opposite at wide angles, closely reticulate, the cells mostly 15—25×5—6 μ. Ch. opposite or less frequently alternate, subantrorse or spreading, straight or bent, 10—17 μ long; stc. cylindric, 2—5 μ long; hc. subglobose to oblong, often more or less bent, sometimes slightly angulose, usually entire, 7—12×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—19×7 μ. Ms. numerous, scattered and grouped around P., straight, to 210×5—6 μ. apex 2—3-dentate to 13 μ. P. scattered, slightly verrucose, to 145 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—40×13—15×9—11 μ.

On *Bignoniaceae* indet., British Guiana, Stevens 249 p. p., type.

(1578) *Meliola bignoniacearum* Stev. var. *irregularis* Hansf., Sydowia Beih. **1**: 100. 1957.

Cols. epiphyllous, to 1 mm. diam., subdense. Hyphae crooked to undulate, branching opposite or irregular at wide angles, closely interwoven-reticulate, cells mostly 20—30×6 μ. Ch. alternate, spreading, often bent, 17—24 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. ovate to oblong, usually bent, more or less irregularly rounded-angulose to sublobate, 11—18×8—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—22×7—8 μ. Ms. few, grouped around P., straight, to 250×6—7 μ, apex obtuse or irregularly 2—4-dentate to 7 μ. P. scattered loosely, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—36×12—15 μ.

On *Bignoniaceae* indet., British Guiana, Stevens 249 p. p., type.

(1579) *Meliola bidentata* Cooke, Grevillea **11**: 37. 1882.

Cols. epiphyllous, numerous and confluent, velvety, dense, to

3 mm. diam. Hyphae straight or slightly undulate, cells mostly 15—25×6—8 μ, branching opposite, acute, closely radiating-reticulate and in places almost solid. Ch. alternate, antrorse, usually straight, 20—29 μ long; stc. cuneate, 5—8 μ long; hc. entire, ovate to clavate, 12—21×9—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. Ms. numerous, straight, simple and acute or more usually 2-dentate to 10 μ, up to 340×8—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—48×15—17 μ.

On *Bignonia capreolata*, U.S.A., Rabh. Fung. europ. 3546; Ravenel, Fung. amer. exs. 128, 330; Ellis, N. Amer. Fung. 1297-a, b; and many other specimens from southern U.S.A. in F and CUP; — On *Adenocalymna* sp., Argentina, Spegazzini 1831 (F); — On *Tecoma pentaphylla*, Porto Rico, Stevens 7347, 9002, 7202; — On *Bignonia unguis*, Porto Rico, Chardon 865 (CUP); — On *Tabebuia haemantha*, Porto Rico, Stevens 4716; — On *Bignoniaceae* indet., Brazil, Ule, Herb. brasil. 695, 1478 (S), Usteri 14 (SPEG); Paraguay, Balansa 3580 (SPEG).

(1580) *Meliola cydistae* Stev. var *aequinoctialis* Cif., Mycopathologia **7**: 120. 1954.

"Differs from type: Ms. longer, to 740 μ, peculiarly branched, crenulate and dentate, not furcate or ramose, simple, obtuse; perithecial setae shorter, 180 μ, usually obtuse".

On *Cydista aequinoctialis*, San Domingo, Ekman 3326, type.

Specimens of this variety have not been available to the present author.

(1581) *Meliola bidentata* Cooke var. *minor* Hansf., Sydowia **9**: 10. 1955.

Cols. epiphyllous, thin to subdense, to 3 mm. diam., numerous and confluent. Hyphae substraight to undulate, cells mostly 20—25× 6—7 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate, more or less antrorse, usually straight, 18—26 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. ovate, entire, rounded or somewhat pointed at apex, 11—17×8—10 μ. Mh. separate in centre, or mixed with ch., opposite or alternate, ampulliform, 13—22×6—8 μ. Ms. scattered, straight, to 480×7—9 μ, apex 2—4-dentate to 12 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×12—13×9—10 μ.

On *Bignoniaceae* indet., Paraguay, Balansa 2730, type (P, K); l. c., Balansa 4007 (P); Brazil, Usteri 76 (SPEG).

(1582) *Meliola cydistae* Stev., Ann. Mycol. **26**: 193. 1928.

Cols. epiphyllous, dense, to 5 mm. diam. Hyphae straight, cells mostly 15—25×6—7 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, substraight, 15—20 μ long; stc. cuneate, 3—6 μ long; hc. wide ovate, entire, 11—15×9—11 μ.

Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×5—7 μ. Ms. scattered and grouped around P., straight, to 280 ×7—8μ, apex cristate with usually many short teeth, to 6 μ long, or 2—3-furcate to 10 μ and branches cristate-dentate. P. scattered, globose, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 31—35× 13—14 μ.

On *Cydista* sp., Panama, Stevens 133, type (FLS, F); — On *Phryganocydia corymbosa*, Trinidad, Baker in IMI 19363; — On *Plenotoma clematis*, Trinidad, Baker in IMI 27680.

(1583) *Meliola bignoniacearum* Stev. var. *tabebuiae* Hansf., Proc. Linn. Soc. London **160**: 133. 1948.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent. Hyphae substraight to slightly undulate, cells mostly 20—30×5—7 μ, branching opposite at wide angles, loosely to rather closely reticulate. Ch. alternate, spreading or antrorse, usually straight, 13—19 μ long; stc. cylindric, 3—6 μ long; hc. narrowly ovate to cylindric, 9—16×6—8 μ, entire. Mh. rare, usually separate in centre, opposite or alternate, ampulliform, 15—18×5—8 μ. Ms. thinly scattered, straight, to 250× 6—7 μ, apex 2—6-dentate to 7 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 29—35×13—15 μ.

On *Tabebuia berterii*, San Domingo, Ciferri, Mycofl. doming. exs. 48-a, type, Ciferri 4268, 2834, Petrak, Mycoth. gener. 1232, Ekman, Pl. ind. occid. H 913 (S).

(1584) *Meliola newbouldiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 66. 1948.

Cols. mostly epiphyllous, dense, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 12—20×6—7 μ, branching opposite, subrectangular, densely reticulate and subsolid in centre. Ch. alternate, or less than 1% opposite, 10—17 μ long, usually straight, spreading; stc. cylindric, 2—5 μ long; hc. globose to wide ovate, entire, 7—12× 8—11 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform. Ms. thinly scattered, straight, simple and acute or shortly 2—3-dentate (—17 μ), to 600×8—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 32—39×13—15 μ.

On *Newbouldia laevis*, Sierra Leone, Deighton 1898 (type), 1398, 1936, 553, 1428; — On *Stereospermum acuminatissimum*, Sierra Leone, Deighton 2344 (with ch. to 5% opposite); — On *Bignoniaceae* indet., Brazil, Ule 1719 p. p. (S).

(1585) *Meliola bignoniacearum* Stev. var. *major* Hansf., Sydowia 9: 60. 1955.

Cols. hypophyllous, subdense, to 10 mm. diam. Hyphae substraight, cells mostly 15—30×7—8 μ, branching opposite, at wide angles, becoming closely interwoven-reticulate. Ch. alternate, straight or bent, spreading, 15—25 μ long; stc. cylindric, 3—10 μ long; hc.

ovate to cylindric with widely rounded apex, entire, 11—18×9—12 μ. Mh. numerous, mixed with ch., opposite or alternate, ampulliform, 16—25×8—9 μ, neck elongate. Ms. thinly scattered, straight, simple and obtuse, or less commonly the apex rough or multi-dentate to 4 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 38—44×14—16 μ.

On *Bignoniaceae* indet., British Guiana, Stevens 105 (FLS, F); — On *Phryganocydia corymbosa*, Panama, Stevens 576 (FLS).

(1586) *Meliola gnathonella* Stev. & Tehon, Mycologia **18**: 16. 1926.
= *Meliola caput-medusae* Cif., Ann. Mycol. **30**: 148. 1932.

Cols. amphigenous, mostly epiphyllous, also on petioles, rather thin, to 1 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×6—7 μ, branching opposite, at wide angles, becoming rather closely interwoven-reticulate. Ch. alternate, antrorse or spreading, usually straight, 15—24 μ long; stc. oblong to cuneate, 4—8 μ long; hc. globose to widely ovate, entire, 11—17×9—13 μ. Mh. few, mixed with ch., opposite or alternate, 15—20×8 μ, ampulliform. Ms. thinly scattered, but mostly grouped around P., straight or often somewhat flexuous, simple and obtuse, or the apex swollen and rarely 2-furcate to 10 μ, up to 280×7—8 μ. P. scattered or in a loose central group, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 33—39×14—15 μ.

On *Jacaranda* sp., British Guiana, Stevens 231 (type) (FLS, F); Brazil, Ule, Herb. brasil. 1472, 1471 (S); Correia in IMUR 5709. — On *J. poitaei*, San Domingo, Ciferri, Mycofl. doming. exs. 163 (type of *M. caput-medusae*); — On *Bignoniaceae* indet., Brazil, Usteri 47 (S).

(1587) *Meliola torulosiseta* Hansf., Sydowia **10**: 94. 1957.

Cols. amphigenous, subdense, to 4 mm. diam. Hyphae tortuous, cells mostly 30—50×7—10 μ, branching alternate or irregular, loosely reticulate. Ch. alternate, tortuous, 35—140 μ long; stc. cylindric or irregularly swollen in places, often 1—3-septate, irregularly bent or geniculate, 15—115 μ long; hc. irregularly ovate to subglobose, angulose or shallowly lobate, versiform, 20—28×15—22 μ. Mh. separate, opposite or alternate, ampulliform, 20—30×7—10 μ. Ms. fairly numerous, scattered and grouped around P., straight to flexuous below, simple, obtuse, the apex torulose or subuncinate to coiled, to 280×8—9 μ. P. scattered, verrucose, to 170 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 45—50×22—25×16—20 μ.

On *Tabebuia ? stenocalyx*, Trinidad, Baker in IMI 27672, type.

(1588) *Meliola ophidiochaeta* Cif., Mycopathologia **7**: 164. 1954.

Cols. epiphyllous, dense, velvety, to 3 mm. diam. Hyphae straight to sinuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 20—30×8—10 μ. Ch. alternate, 21—30 μ long; stc. 8—10 μ long; hc. subglobose to elliptic or ovate, entire,

13—20×10—15 μ. Mh. separate, opposite or alternate, ampulliform, 21—25×10—12 μ. Ms. irregularly scattered and grouped around P., simple, curved to spiral, uncinate or irregularly bent, obtuse, to 300×14—15 μ thick below, apex 8—10 μ thick, sometimes slightly torulose, rarely subdentate. P. scattered, verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 39—43×16—19 μ.

On *Tabebuia polyantha*, San Domingo, Ekman 4175, type.

Material of this species has not been available to the present author, and the above description is adapted from Ciferri, l.c.

(1589) *Meliola tecomae* Stev., Illionis Biol. Monogr. 2: 53. 1916.

Cols. amphigenous, mostly epiphyllous, 2—5 mm. diam., subdense, thinly velvety. Hyphae straight, cells mostly 25—30×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, more or less antrorse, usually straight, 19—26 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate to cylindric, entire, 13—17×10—14 μ. Mh. separate, opposite or alternate, conoid to ampulliform, 16—18×6 μ. Ms. numerous, scattered, simple, obtuse, broadly uncinate to loosely coiled above, to 270×8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 36—43×15—18 μ.

On *Tecoma pentaphylla*, Porto Rico, Stevens 9332, type, 7078, 7396, 8177, 4981, 4310-a, 4978, 6790, 9163, 8960, 3950, 4804, 3953, 3953-a, Whetzel 595, Seaver 1062, Stevenson 6384, Fink 1018; — On *T. leucoxylon*, Porto Rico, Heller 6419 (K, S); — On *T. albiflora*, ? Cuba, Ducke 18173 (S).

(1590) *Meliola kampalense* Hansf., Journ. Linn. Soc. London **51**: 276. 1937.

Cols. amphigenous and on petioles, to 4 mm. diam., dense, subcrustose, velvety. Hyphae slightly undulate to straight, cells mostly 15—20×6—8 μ, branching opposite, acute, densely reticulate. Ch. alternate, more or less antrorse, usually straight, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. ovate to clavate, entire 10—14×7—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—8 μ. Ms. numerous, closely scattered, straight below, irregularly bent to uncinate or loosely coiled above, often subtorulose near apex, simple, obtuse, to 240×8—9 μ. P. scattered or subaggregate, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—34×12—14 μ.

On *Markhamia (Dolichandrone) platycalyx*, Uganda, Hansford 1385 (type), 1875, 2057, 2368, 2470, etc.

(1591) *Meliola manaosellae* Hansf., Sydowia **10**: 78. 1957.

Cols. epiphyllous, to 2 mm. diam. or numerous and confluent, dense. Hyphae undulate to flexuous, cells mostly 15—20×6—8 μ, branching opposite or irregular at wide angles, closely reticulate.

Ch. alternate or to 10% opposite, antrorse or spreading, straight or slightly bent, 12—18 μ long; stc. cylindric, 2—6 μ long; hc. globose, entire, 10—14×8—11 μ. Mh. mixed with ch., alternate or opposite, few, ampulliform, 14—19×7—9 μ. Ms. scattered and grouped around P., straight or slightly bent, simple, obtuse, to 290×6—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 33—38×13—15 μ.

On *Bignoniaceae* indet., Ecuador, Stevens 316 (F); — On *Manaosella platydactyla*, Brazil, Froes 30491 (K, type).

(1592) *Meliola lanceolata-setosa* Syd., Ann. Mycol. **12**: 197. 1914.

Cols. epiphyllous, rarely also hypophyllous, 1—4 mm. diam., dense, velvety. Hyphae substraight or slightly undulate, cells mostly 15—20×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or in some colonies also about 5% opposite, straight or often bent, at varying angles, 16—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. globose to widely clavate, entire, 12—18×10—13 μ. Mh. few, in centre of colony, mixed with ch., opposite or alternate, ampulliform, 15—20×8—10 μ. Ms. numerous, closely scattered, straight, simple, acute, to 350×9—10 μ. P. subaggregate in centre of colony, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted. 40—49×16—19×12—14 μ.

On *Markhamia platycalyx*, Tanganyika, Grote in Sydow, Fung. exot. exs. 248, type (S); Uganda, Dummer 1112, Small 293.

(1593) *Meliola asperipoda* Hansf., Sydowia **9**: 9. 1955.

Cols. amphigenous, to 2 mm. diam., thin to subdense. Hyphae sinuous to tortuous, cells mostly 20—25×8—9 μ, branching alternate, rarely opposite, acute, loosely to closely reticulate. Ch. alternate, more or less antrorse, 23—40 μ long; stc. cylindric or with crenulate sides, 5—16 μ long; hc. very irregularly and often deeply lobate, versiform, 15—28×12—22 μ. Mh. few, mixed with ch., alternate, narrow ampulliform, 20—25×6—8 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse, to 250×8—10 μ, P. scattered, verrucose, to 250 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×15—17×14 μ.

On *Bignoniaceae* indet., Brazil, Ule, Herb. brasil. 1719 p. p., type, mixed with *M. newbouldiae* (S).

(1594) *Meliola markhamiae* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 278. 1937.

Cols. amphigenous, thin, subvelvety, 2—5 mm. diam. Hyphae undulate, cells mostly 25—33×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, usually straight, 16—20 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. ovate, entire, 10—14×7—10 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. mostly grouped around P., straight,

simple, obtuse, to 450×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—34×11—14 μ.

On *Markhamia platycalyx*, Uganda, Hansford 1199 (type), 1793, 2057, 2367, 2554, etc., Dummer 112.

(1595) *Meliola standleyi* Hansf., Sydowia **9**: 76. 1955.

Cols. amphigenous, to 8 mm. diam. or numerous and confluent, subdense, velvety. Hyphae slightly undulate, cells mostly 20—30× 6—7 μ, branching opposite at varying angles, becoming closely tericulate-interwoven. Ch. alternate, antrorse or spreading, straight or slightly bent, 16—25 μ long; stc. cuneate, 4—10 μ long; hc. ovate, rounded or somewhat pointed at apex, entire, 12—17×8—11 μ. Mh. few, separate, opposite or alternate, ampulliform, 13—18×7—9 μ. Ms. numerous, scattered, straight, simple, obtuse, to 500×7—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 33—37×14—16×11—13 μ.

On *Bignoniaceae* indet., Honduras, Standley 55573, type (F).

The setae are often slightly torulose below the apex, and sometimes bent, but not uncinate.

(1596) *Meliola crescentiae* Stev., Ann. Mycol. 26: 240. 1928.

Cols. epiphyllous, dense, 2—4 mm. diam. or confluent. Hyphae straight or slightly undulate, cells mostly 15—30×5—6 μ, branching opposite, acute, loosely to rather closely reticulate. Ch. alternate, more or less antrorse, usually straight, 12—18 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. globose to ovoid, entire, 8—12×7—11 μ. Mh. mixed with ch. in centre of colony, opposite, alternate or rarely ternate, few, ampulliform, 11—16×6—8 μ. Ms. few, mostly grouped around P., straight, simple, obtuse, to 200×7—8 μ. P. scattered, nearly smooth, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 27—32×10—13 μ.

On *Crescentia* sp., Trinidad, Stevens 940, type; — On *C. cujete*, San Domingo, Ciferri, Mycofl. doming. exs. 176; Ekman 3265; Brazil, Weir (F); Baker, 1908 (S); Venezuela, *Muller* 1915 (CUP; — On *Heterophragma roxburgii*, India, Sedgwick, with slightly larger hc. and sp. 29—37×12—15 μ; — On *Tabebuia pentaphylla*, Honduras, Standley 54173 (F); — On *Bignoniaceae* indet., Malaya, Johnston in IMI 51278.

(1597) *Meliola arrabidaeae* Hansf., Sydowia Beih. **1**: 99. 1957.

Cols. epiphyllous, to 3 mm. diam. or confluent, thin to subdense. Hyphae undulate, branching opposite or irregular, acute to wide, loosely reticulate, becoming rather closely interwoven, cells mostly 20—30×4,5—5,5 μ. Ch. alternate, spreading to antrorse, straight or slightly bent, 14—17 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. subglobose, entire, obtuse at apex 10—12×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—16×6—7 μ. Ms. fairly numerous, scattered and grouped around P., simple, obtuse to

clavulate, straight or slightly flexuous, to 220×5,5—7 μ. P. scattered, slightly verrucose, to 155 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 27—32×10—12 μ.

On *Arrabidaea* sp., Panama, Stevens 547, 545 (type); — On *A. pachycalyx*, Panama, Stevens 711.

(1598) *Meliola arrabidaeae* Hansf. var. **irregularis** (Stev.) Hansf., comb. n.

= *Meliola peruviana* Syd. var. *irregularis* Stev., Ann. Mycol. **26**: 256. 1928.

Cols. amphigenous, thin to subdense, to 10 mm. diam. Hyphae sinuous, branching opposite, acute, loosely to closely interwoven-reticulate, cells mostly 20—30×4—5 μ. Ch. alternate, spreading or subantrorse, straight or slightly bent, 10—14 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. subglobose to ovate, entire, apex obtuse or very slightly pointed, 7—10×5—8 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 10—15×6—7 μ. Ms. scattered, simple, straight or sometimes slightly torulose-bent above, obtuse to 240×7—8 μ. P. scattered, globose, slightly verrucose, to 145 μ diam. Sp. oblong to subfusoid, straight or often bent, ends obtuse to slightly attenuate-rounded, 4-septate, slightly constricted, 27—33×8—9,5 μ.

On *Bignoniaceae* indet., Panama, Stevens 420, 421, 557 (FLS); Trinidad, Thaxter 7450 (F).

Host Family 258. Pedaliaceae.

(1599) *Meliola sesami* Hansf. & Deight., Sydowia **10**: 89. 1957.

Cols. epiphyllous, rarely also hypophyllous, to 2 mm. diam., or numerous and widely confluent, dense. Hyphae tortuous, cells mostly 20—30×5—7 μ, opposite or irregularly branched, closely radiating-reticulate. Ch. alternate, more or less antrorse, 12—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to irregularly rounded-angulose, 9—13×8—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—20×6—8 μ. Ms. scattered, straight simple, obtuse, to 200×6—7 μ. P. scattered or loosely aggregate, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—35×10—14 μ.

On *Sesamum indicum*, Sierra Leone, Deighton 478 (type), 1192; — On *S. radiatum*, Sierra Leone, Deighton 1196, 546.

This was formerly placed (Mycol. Paper, IMI, 23: 67, 1948) as *M. microspora*, from which it differs in larger hypophodia and spores.

(1600) *Meliola sesami* Hansf. & Deight., var. **ceratothecae** Hansf. & Deight., comb. n.

(3111.3221)

= *Meliola microspora* Pat. & Gaill. var. *ceratothecae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 67. 1948.

Cols. epiphyllous, to 3 mm. diam., thin to subdense. Hyphae undulate to sinuous, cells mostly 20—25×5—7 μ, branching opposite or irregular, acute, rather closely reticulate-interwoven. Ch. alternate, antrorse or spreading, straight or bent, 15—35 μ long; stc. cylindric, 5—25 μ long, the longer ones 1—2-septate; hc. versiform, from subglobose and entire, to ovate or more usually irregularly angulose to sublobate, straight or bent, 9—16×7—15 μ. Mh. few, mixed with ch., opposite or mostly alternate, ampulliform, 19—27×6—10 μ. Ms. scattered, straight or slightly flexuous, simple, obtuse, to 230×6—7,5 μ. P. closely scattered in centre of colony, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—35×10—12 μ.

On *Ceratotheca sesamoides*, Sierra Leone, Deighton 2400, type.

Host Family 259. Acanthaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220	Cols. thin; hyphae sinuous to tortuous; hc. angulose to sublobate; ps. 0—6, obtuse, finely granulose	*graptophylli*	(1601)
(?)3401.3230	Cols. thin; hyphae straight or undulate, hc. rounded; ps. basal, to 370 μ	*hypoestis*	(1602)

Asteridiella

3101.4320	Cols. thin; hyphae substraight to undulate; hc. globose-piriform, entire; P-cells conoid-mammillate, to 30 μ high	*mendonciae*	(1603)
3101.4220	Cols. thin; hyphae tortuous; hc. ovate to angulose; P-cells conoid, to 15 μ high	*thunbergiae*	(1604)
3101.4220	Cols. dense, small; hyphae tortuous to substraight; hc. angulose to sublobate; P-cells conoid, to 30 μ high	*irregularis*	(1605)
3101.3220	Cols. dense, small; hyphae substraight; hc. ovate, entire; P-cells rounded-conoid to 15 μ high	*anastomosans* var. *macilenta*	(1606)
3101.3220	Cols. dense; hyphae sinuous; hc. ovate to subangulose; P-cells rounded	*thunbergiae-chrysopidis*	(1607)

Meliola

3133.3223	Cols. dense, subvelvety; hyphae undulate; hc. subglobose, entire; ms. dentate to 10 μ	*justiciae*	(1608)
31⅓1.4222	Cols. velvety, dense; hyphae undulate; hc. globose, entire; ms. acute or dentate	*sclerochitonicola*	(1609)
31⅓1.3232	Cols. dense; hyphae undulate to sinuous; hc. clavate-ovate, entire; ms. acute or 2-dentate.	*hypoestis*	(1610)
3111.4232	Cols. dense, subvelvety; hyphae undulate to sinuous; hc. ovate-clavate or angulose to lobate; ms. obtuse	*vanderystii*	(1611)

3111.4222	Cols. dense, subvelvety; hyphae straight to undulate; hc. subglobose to sublobate; ms. acute	*thunbergiicola*	(1612)
3111.4221	Cols. dense, velvety; hyphae substraight; hc. ovate, entire; ms. obtuse	*thunbergiae*	(1613)
3111.3222	Cols. dense, subcrustose; hyphae sinuous; hc. clavate-ovate or angulose; ms. obtuse	*brillantaisiae*	(1614)
3111.3222	Cols. thin to dense, small; hyphae substraight to undulate; hc. ovate, entire; ms. obtuse to subacute	*acanthacearum*	(1615)
3111.3222	Cols. dense, velvety; hyphae undulate to flexuous; hc. narrow ovate, entire; ms. acute, rarely obtuse	*acanthacearum* var. *occidentalis*	(1615a)
3111.3221	Cols. thin; hyphae substraight; hc. elliptic to elongate or angulose; ms. acute	*cladacantha*	(1616)
3111.3221	Cols. dense, secedent; hc. clavate-ovate, entire; ms. obtuse	*beloperoins*	(1617)
3111.3122	Cols. thin, small; hyphae undulate; hc. ovate, entire; ms. acute	*culebrensis*	(1618)

(1601) *Irenopsis graptophylli* Hansf., Reinwardtia **3**: 75. 1954.

Cols. amphigenous, to 5 mm. diam. or confluent, thin, smooth. Hyphae crooked, cells mostly 20—30×5—6 μ, branching opposite or irregular at wide angles, loosely interwoven-reticulate. Ch. alternate or more scattered, straight or bent, 12—22 μ long; stc. cylindric, 2—6 μ long; hc. rounded-angulose to shallowly lobate, versiform, 9—17×10—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—19×6—8 μ. P. loosely scattered, each on a loose radiate subiculum, verrucose, to 120 μ diam.; surface cells rounded, projecting to 10—15 μ; ps. 0—6, from upper half, erect-spreading, dark brown, straight, simple, obtuse, 2—3-septate, to 120×7—8 μ, upper part finely granulose. Sp. cylindric, obtuse, 4-septate, slightly constricted, 29—33×13—14 μ.

On *Graptophyllum pictum*, Java, BO 12579, type.

(1602) *Irenopsis hypoestes* E. Castellani, Nuovo Giorn. Bot. Ital., N.S., **53**: 214. 1947.

Cols. amphigenous, mostly hypophyllous, to 1 mm. diam., or confluent into irregular patches on pale yellow-brownish indeterminate areas of the leaf. Hyphae straight or undulate, ramose, cells 26—32×6—8 μ. Ch. alternate, 20—24 μ long; stc. cylindric to cuneate, 6 μ long; hc. rounded, entire, 14—18×8—10 μ. P. globose, verrucose, to 250 μ diam., with setae at the base, straight or slightly bent, to 370×8—10 μ, simple, subacute. Sp. oblong to subellipsoid, 4-septate, constricted, 32—34×12—14 μ.

On *Hypoestes paniculata*, Abyssinia, Castellani, type.

Specimens of this species have not become available to the present writer, but from the original description it is more than probable that the setae are mycelial in origin, and merely grouped

around the perithecia. If this view is correct, the fungus should be referred to *Meliola*, formula 3111.3232, very close to, if not identical with *M. hypoestis* Hansf. (no. 1610, below).

(1603) *Asteridiella mendonciae* Hansf., Sydowia **10**: 49. 1957.
= *Irene mendonciae* Hansf., Sydowia **9**: 57. 1955.

Cols. epiphyllous, thin, smooth, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×6—8 μ, branching opposite or irregular, wide, loosely reticulate. Ch. alternate, usually straight, more or less antrorse, 18—27 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. globose to wide piriform, entire, 12—18×10—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—9 μ. P. scattered, verrucose, to 200 μ diam., surface cells conoid to mammillate, to 30 μ high by about 40 μ diam. at the base. Sp. ellipsoid, obtuse, 4-septate, constircted, 40—49×18—22 μ.

On *Mendoncia coccinea*, Brazil, Ule, Herb. brasil 91, Rabh.-Wint.-Pazschke, Fung. europ. 3853 (S, K).

(1604) *Asteridiella thunbergiae* (Stev. & Rold.) Hansf., Sydowia 10: 50. 1957.
= *Irenina thunberiae* Stev. & Rold., Philipp. Journ. Sci. **56**: 54. 1935.

Cols. epiphyllous, thin, to 4 mm. diam., smooth. Hyphae tortuous, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, subantrorse, 17—25 μ long, straight or bent; stc. cylindric to cuneate, 3—8 μ long; hc. ovate to irregular, entire or rounded-angulose, 13—18×11—13 μ; Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—8 μ. P. scattered, verrucose, to 160 μ diam. ,surface cells obtusely conoid, to 15 μ high. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 38—43×16—17 μ.

On *Thunbergia alata*, Philippines, Stevens 1642, type (FLS, CUP).

(1605) *Asteridiella irregularis* (Stev.) Hansf., Sydowia 10: 48. 1957.
= *Meliola irregularis* Stev., Illinois Biol. Monogr. **2**: 483. 1916.
= *Irenina irregularis* Stev., Ann. Mycol. **25**: 455. 1927.

Cols. amphigenous, 1 mm. diam., dense, smooth. Hyphae tortuous to substraight, cells mostly 15—20×7 μ, branching alternate or irregular, acute, densely reticulate. Ch. alternate, more or less antrorse, straight or bent, 18—25 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. clavate, rounded-angulose to irregularly sublobate, 12—20×9—15 μ. Mh. few in centre of colony, mixed with ch., alternate or opposite, ampulliform, 15—20×5—7 μ. P. scattered, to 200 μ diam., surface cells conoid, often bent, obtuse, to 30 μ high by about 40 μ diam. at base. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—41×12—14 μ.

On *Hygrophila brasiliensis*, Porto Rico, Stevens 9283, type; — On *Justicia* sp., Uganda, Hansford 1252, 1460, 1789, 2637; — On *Mimulopsis* sp., Uganda, Hansford 1417; — On *Astysasia* sp., Sierra Leone, Deighton 5255-a.

(1606) *Asteridiella anastomosans* Wint. var. *macilenta* (Wint.) Hansf., Sydowia **10**: 46. 1957.

= *Meliola inermis* K. & C. var. *macilenta* Wint. in Gaill., Le Genre *Meliola*, 1892, p. 65.

= *Irene inermis* (K. & C.) Theiss. & Syd. var. *macilenta* (Wint.) Stev., Ann. Mycol. **25**: 429. 1927.

= *Irenina anastomosans* Wint. var. *macilenta* (Wint.) Hansf., Proc. Linn. Soc. London, **165**: 168. 1955.

Cols. epiphyllous, rarely amphigenous, dense, smooth, to 1 mm. diam., closely scattered, not usually confluent. Hyphae substraight to slightly undulate, cells mostly 15—20×6—8 μ, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, usually straight, 14—19 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. ovate, entire, 11—14×6—9 μ. P. in close central group, verrucose, to 150 μ diam., surface cells rounded to obtusely conoid, to 15 μ high. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 28—33×11—13 μ.

On *Brillantaisia patula*, San Thome, Moller. type (S, K).

(1607) *Asteridiella thunbergiae-chrysopidis* (Hansf. & Deight.) Hansf., Sydowia **10**: 50. 1957.

= *Irenina thunberiae-chrysopidis* Hansf. & Deight., Mycol. Paper, IMI **23**: 67. 1948.

Cols. epiphyllous, dense, smooth, to 2 mm. diam. Hyphae sinuous, cells mostly 15—25×7—8 μ, branching irregular, acute, closely reticulate. Ch. alternate, antrorse, 18—30 μ long; stc. cylindric to cuneate, 5—15 μ long; hc. ovate to slightly angulose, somewhat attenuate-rounded at apex, 12—16×9—12 μ. P. loosely scattered in centre of colony, verrucose, to 170 μ diam., surface cells rounded. Sp. oblong, obtuse, 4-septate, constricted, 32—37×11—13 μ.

On *Thunbergia chrysops*, Sierra Leone, Deighton 2181, 2241.

(1608) *Meliola justiciae* Hansf., Journ. Linn. Soc. London **51**: 541. 1938.

Cols. epiphyllous, to 1,5 mm. diam., dense, subvelvety. Hyphae slightly undulate to sinuous, cells mostly 13—20×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or opposite, 13—17 μ long; antrorse or spreading, straight or slightly bent; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose, entire, 8—11×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, few. Ms. numerous, scattered, straight, to 580×9—11 μ, apex variously dentate to 10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—39×12—15 μ.

On *Justicia* ? *laxa*, Uganda, Hansford 2013 (type), 2087.

(1609) **Meliola sclerochitonicola** Hansf., nom. n.
= *Meliola sclerochitonis* Hansf., Journ. Linn. Soc. London 56: 544. 1938. (non Kalchbr., Herb. Macowan, Crypt. Austro-afric. 1290, cited by Doidge, Bothalia 5: 206. 1950).

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., velvety, dense. Hyphae undulate, cells mostly 15—28 × 6—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, 13—18 μ long, straight or slightly bent, at wide angles; stc. cylindric, 3—5 μ long; hc. globose, entire, 11—14 μ diam. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20 × 6—9 μ. Ms. numerous, straight, to 400 × 8—10 μ, apex simple and acute or 2—3-dentate to 10 μ, scattered. P. scattered, verrucose, to 160 μ diam. Sp. oblong to subellipsoid, 4-septate, obtuse, constricted, 39—42 × 12—15 μ.

On *Sclerochiton obtusisepalus*, Uganda, Hansford 2001 (type), 1495, 2256.

(1610) *Meliola hypoestis* Hansf., Proc. Linn. Soc. London 158: 32. 1946.

Cols. epiphyllous, 0,5 mm. diam., dense. Hyphae undulate to sinuous, cells mostly 15—25 × 7—9 μ, branching alternate or unilateral, closely reticulate. Ch. alternate, more or less antrorse, 20—27 μ long; straight or bent; stc. cylindric to cuneate, 6—11 μ long; hc. clavate to broadly ovate, entire, or more often shallowly 2—3-lobate above, 13—20 × 9—17 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform. Ms. scattered, straight, to 320 × 7—9 μ, apex simple and acute, or rarely 2-dentate to 10 μ. P. in central group, verrucose, to 240 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 32—37 × 13—15 μ.

On *Hypoestes verticillaris*, Congo Belge, Hansford 3753 p. p., type.

(1661) *Meliola vanderystii* Hansf., Sydowia Beih. 1: 119. 1957.

Cols. mostly epiphyllous, dense, subvelvety, to 2 mm. diam. or confluent. Hyphae undulate to sinuous, branching opposite or irregular at wide angles, closely reticulate, cells mostly 15—20 × 6—7 μ. Ch. alternate, straight or bent, more or less antrorse, 18—30 μ long; stc. cuneate, 6—12 μ long; hc. ovate, clavate or angulose to sublobate, versiform, 14—20 × 8—12 μ. Mh. mixed with ch., alternate, ampulliform, 16—22 × 7—8 μ, neck elongate. Ms. mostly around P., straight or somewhat flexuous, simple, obtuse, to 330 × 7—8 μ. P. scattered, globose, verrucose, to 230 μ diam. Sp. bent oblong, obtuse, 4-septate, constricted, 42—51 × 11—12 μ.

On *Acanthaceae* indet., Congo Belge, Vanderyst 16906, type (BRUX).

(1612) *Meliola thunbergiicola* Hansf. & Deight., Mycol. Paper, IMI, **23**: 68. 1948.

Cols. amphigenous, subvelvety, dense, to 5 mm. diam. Hyphae straight or undulate, cells 20—50 × 6—8 μ, loosely to densely reticulate, irregularly branched. Ch. alternate or less than 1% opposite, straight or bent, spreading or antrorse, 15—25 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose to clavate, entire or irregularly angulose to sublobate, 11—18 × 10—14 μ. Mh. mostly separate, ampulliform, opposite or alternate, 13—20 × 7—10 μ. Ms. scattered, straight, simple, acute, to 400 × 8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—50 × 14—16 μ.

On *Thunbergia cynanchifolia*, Sierra Leone, Deighton 2287 (type), 2064.

(1613) *Meliola thunbergiae* Hansf., Lourn. Linn. Soc. London, **51**: 545. 1938.

Cols. amphigenous, 1—4 mm. diam., dense, velvety. Hyphae straight or slightly undulate, cells mostly 20—40 × 6—8 μ, branching alternate or unilateral, acute, closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 23—32 μ long; stc. cuneate, 8—14 μ long; hc. ovate, rounded or somewhat pointed at apex, entire, 14—19 × 10—15 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform. Ms. numerous, scattered, straight or slightly bent, simple, obtuse, to 300 × 10 μ. P. in central group, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44 × 16—18 μ.

On *Thunbergia alata*, Uganda, Hansford 2252 (type), 3062, 3160, 3536, 3583.

(1614) *Meliola brillantaisiae* Hansf. & Deight., Mycol. Paper, IMI, **23**: 68. 1948.

Cols. hypophyllous or occasionally also epiphyllous and smaller, dense, to 2 mm. diam., subcrustose. Hyphae sinuous, cells mostly 20—25 × 5—6 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate, 15—20 μ long, more or less antrorse, usually straight; stc. cuneate to cylindric, 5—8 μ long; hc. clavate to ovate, entire or sometimes rounded-angulose, 12—16 × 8—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. scattered, simple, obtuse, straight or slightly flexuous above, to 320 × 7—8 μ, sometimes subtorulose near apex. P. closely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—36 × 11—13 μ.

On *Brillantaisia nitens*, Sierra Leone, Deighton 1673 (type), 2397, 1958; Gold Coast, Deighton CB 790, Hughes in IMI 42153, 39525; — On *B. lamii*, Sierra Leone, Deighton 2425; — On *Lepidagathis* sp., Java, BO 4925.

(1615) *Meliola acanthacearum* Hansf., Proc. Linn. Soc. London, **157**: 183. 1946.

Cols. epiphyllous, to 1 mm. diam., thin to dense. Hyphae substraight to undulate, cells mostly 15—20×6—8 μ, branching alternate or opposite, acute, loosely to closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 18—25 μ long; stc. cuneate, 5—10 μ long; hc. ovate, rounded to slightly pointed at apex, entire, 12—20×7—11 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 12—20×6—8 μ. Ms. few. scattered or grouped around P., straight, simple, obtuse to subacute, rarely acute, to 450×8—9 μ. P. in central group, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—35×11—14 μ.

On *Justicia flava*, Uganda, Hansford 3428 (type), 1815; — On *Mimulopsis* sp., Uganda, Hansford 1417 p. p.; — On *Hypoestes verticillaris*, Congo Belge, Hansford 3573 p. p.; South Africa, PRET 17749; — On *Rhinacanthus communis*, South Africa, PRET 9721; — On *Barleria obtusa*, South Africa, PRET 6623; — On *Isoglossa woodii*, South Africa, PRET 11377, 11351; — On *Justicia bowiei*, South Africa, PRET 22368; — On *Dicliptera chinopodia*, South Africa, PRET 28342; — On *Acanthaceae* indet., Java, BO 4651.

(1615-a) *Meliola acanthacearum* Hansf. var. *occidentalis* Hansf., Sydowia **11**: 50. 1957.

Cols. amphigenous. to 1 mm. diam., dense, velvety. Hyphae slightly undulate to flexuous, branching opposite, acute, closely to densely radiating-reticulate, cells mostly 10—25×6—8 μ. Ch. alternate, closely antrorse, straight or slightly bent. 19—27 μ long; stc. cuneate, 4—9 μ long; hc. narrow ovate, rounded to slightly pointed at apex, entire, 15—21×7—10 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 15—24×7—9 μ. Ms. scattered, numerous, straight, simple, acute, rarely obtuse, to 400×7—8 μ. P. in loose central group, verrucose to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—33×13—14 μ.

On *Ruellia coccinea*, Porto Rico, Whetzel 2781 (type), 2780, 2782 (CUP); — On *Acanthaceae* indet., Jamaica, Thaxter 7205 (F).

(1616) *Meliola cladacantha* Cif., Mycopathologia **7**: 112. 1954.

Cols. amphigenous, to 3 mm. diam., thin, on lower surface larger, effuse and confluent. Hyphae straight or slightly undulate, 7—9 μ thick, branching opposite, loosely reticulate. Ch. alternate, 20—28 μ long; stc. 7—11 μ long; hc. elliptic to elongate, entire or rarely angulose, 14—18×10—13 μ. Mh. mixed with ch., conoid to ampulliform, 13—16 μ long. Ms. straight, simple, acute, to 300×7—8 μ. P. in central group, verrucose, to 150 μ diam., surface cells mammillate. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 32—35×14—16 μ.

On *Stenandrium scabrosum*, San Domingo, Ekman 4196. type. (Descr. after Ciferri, l. c., not seen by me).

(1617) *Meliola beloperonis* Viegas, Bragantia **4**: 34. 1944.

Cols. easily secedent, dense, 1—2 mm. diam. or widely confluent.

Hyphae densely reticulate, 7—8 μ wide, branching opposite. Ch. alternate, stc. 4—5 μ long; hc. clavate to ovoid or elongate, entire, 16—18×8—9 μ. Ms. straight, simple, obtuse, or subacute, to 260×8 μ. P. to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—34×10—18 μ.

On *Beloperone* sp., Brazil, Viegas. June 1940.

Specimens have not become available to the present author.

(1618) *Meliola culebrensis* Hansf., Sydowia Beih. **1**: 106. 1957.

Cols. epiphyllous, thin, to 1 mm. diam., not usually confluent. Hyphae undulate, branching opposite, acute, loosely reticulate, the cells mostly 20—30×5—6 μ. Ch. alternate, antrorse, straight or very slightly bent, 15—21 μ long; stc. cuneate, 3—7 μ long; hc. ovate, entire, rounded or slightly pointed at apex, 11—16×8—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15—19×6—7 μ. Ms. scattered thinly and grouped around P., straight, simple, acute when fully mature, to 360×8—9 μ. P. scattered, globose, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, slightly constricted, 27—32×9—10 μ.

On *Acanthaceae* indet., Panama, Stevens 912, type (FLS).

Host Family 263. Verbenaceae.

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3401.3220	(doubtful variety)	*aciculosa* var. *viticis*	(1619)
3401.3230	(doubtful variety)	*aciculosa* var. *verbenae*	(1620)

Asteridiella

3103.3220	Cols. thin to dense; hyphae tortuous; hc. globose-ovate, entire; P-cells conoid, to 15 μ high	*callicarpae*	(1621)
3101.5340	Cols. dense; hyphae substraight; hc. large, cylindric, entire; P-cells rounded, to 15 μ ...	*lagerheimii*	(1622)
3101.4230	Cols. dense; hyphae substraight; hc. cylindric-clavate, entire; P-cells rounded, to 15 μ high	*pittieri*	(1623)
3101.4220	Cols. thin; hyphae undulate; hc. large, ovate-piriform, entire; P-cells conoid-cylindric, to 45 μ high	*formosensis*	(1624)
3101.4230	Cols. dense; hyphae substraight; hc. ovate, angulose to sublobate; P-cells rounded, to 12 μ high	*vilis* var. *caracasensis*	(1625)
3101.4220	Cols. dense; hyphae substraight; hc. ovate-clavate, entire; P-cells rounded, to 10 μ high	*vilis* var. *citharexyli*	(1626)
3101.4220	Cols. dense; hyphae sinuous-tortuous; hc. ovate-clavate or angulose; P-cells to 25 μ high	*sepulta*	(1627)

3101.4220 Cols. dense; hyphae undulate to crooked; hc. clavate or angulose; P-cells to 45 μ high .... *aegiphilae* (1628)

3101.4220 Cols. thin; hyphae substraight; hc. subglobose-piriform or angulose; P-cells to 25 μ high, conoid-mammillate ..... *callista* (1629)

3101.4220 Cols. dense; hyphae tortuous; hc. angulose to lobate; P-cells rounded, to 14 μ high ..... *depokensis* (1630)

3101.3220 Cols. thin; hyphae undulate-flexuous; hc. globose-piriform, entire; P-cells to 12 μ high. *vilis* (1631)

3101.3220 Cols. thin; hyphae substraight; hc. globose to clavate, entire; P-cells to 15 μ high ..... *premnae* (1632)

Meliola

3133.3222 Cols. thin to dense, velvety; hyphae substraight to undulate; hc. globose-ovate, entire; ms. 2—4-dentate to 15 μ ..... *clerodendri* (1633)

3131.3222 Cols. dense, velvety; hyphae substraight; hc. subglobose-clavate, entire to lobate; mh. separate; ms. 2—3-dentate to 12 μ ..... *petraeoviticis* (1633a)

31⅓1.4223 Cols. thin; hyphae substraight; hc. cylindric, entire; ms. acute or 2—3-dentate ..... *pseudocapensis* (1634)

31⅓1.3221 Cols. subdense, velvety; hyphae substraight; hc. globose-ovate, entire; ms. obtuse or 2—3-furcate to 35 μ, tips obtuse ..... *cookeana* var. *viticis* (1635)

31⅓1.2221 Cols. subdense; hyphae undulate to crooked; hc. globose-ovate, entire; ms. obtuse or 2-furcate to 25 μ, tips obtuse ..... *cookeana* var. *aegiphilae* (1636)

3121.3231 Cols. dense; hyphae undulate to sinuous; hc. ovate, entire, large; ms. uncinate to loosely coiled. obtuse ..... *lippiae* (1637)

3113.4222 Cols. thin; hyphae undulate to sinuous; hc. globose to ovate, entire; ms. obtuse ..... *callicarpicola* (1638)

3113.3223 Cols. thin; hyphae undulate; hc. ovate-oblong or subangulose; ms. obtuse to acute ..... *symphoremae* (1639)

3113.3223 Cols. subdense, subvelvety; hyphae substraight; hc. subglobose-ovate, entire; ms. acute ..... *callicarpae* (1640)

3111.4232 Cols. dense; hyphae substraight; hc. large, ovate, entire; ms. obtuse to acute ..... *ambigua* (1641)

3111.3221 Cols. dense; hyphae substraight; hc. ovate to angulose; ms. crooked, obtuse ..... *premnae* (1642)

3111.3221 Cols. thin; hyphae sinuous; hc. ovate-piriform, entire; ms. obtuse, subtorulose ..... *viticicola* (1643)

3111.3221 Cols. dense, velvety; hyphae substraight; hc. globose-ovate, entire; ms. obtuse ..... *clerodendricola* (1644)

3111.3221 Cols. subdense; hyphae substraight to sinuous; hc. ovate to subglobose, entire; ms. obtuse .. *clerodendricola* var. *micromera* (1645)

3111.3221 Cols. dense; hyphae sinuous to crooked; hc. globose-ovate, entire; ms. obtuse ..... *cookeana* (1646)

3111.3221 Cols. dense; hyphae substraight; hc. subglobose-piriform, entire; ms. obtuse ..... *thomandersiae* (1647)

3111.3221	Cols. thin; hyphae substraight; hc. ovate-globose or angulose; ms. obtuse	*cantareirensis*	(1648)
3111.3221	Cols. thin; hyphae undulate; hc. ovate-clavate, entire; ms. obtuse	*petitiae*	(1649)
3111.2221	Cols. thin; hyphae straight to crooked; hc. globose-ovate, small, entire; ms. obtuse	*paraensis*	(1650)
3111.4232	Cols. dense; hyphae substraight; hc. oblong-piriform, entire; ms. acute	*durantae*	(1651)
3111.3222	Cols. dense, subvelvety; hyphae substraight; hc. cylindric-ovate, entire; ms. acute	*durantae* var. *lippiae*	(1652)
3111.3222	Cols. thin; hyphae substraight; hc. ovate to cylindric, entire; ms. acute	*durantae* var. *acutiseta*	(1653)

(1619) *Irenopsis aciculosa* (Wint.) Stev. var. *viticis* (Rehm) Stev., Ann. Mycol. Berlin **25**: 438. 1927.

(3401.3220)

= *Meliola aciculosa* Wint. var. *viticis* Rehm, Leafl. Philipp. Bot. **6**: 2257. 1914.

"Differs from the species type in the dark fuscous, closely compressed mycelium; in other characters the same". (Rehm, l. c.)

No authentic specimens of this variety have been traced by the present author ,who regards it as of very doubtful value.

On *Vitex negundo*, Philippines, Baker 1515, type.

Ciferri in Mycopathologia 7: 89, 1954. records this on *Vitex integrifolia* from San Domingo (Ekman 4174), but his specimens have not been available for study.

(1620) *Meliola aciculosa* Wint. var. *verbenae* Cif., Mycopathologia **7**: 89. 1954.

"Differs from the species type in the confluent colonies; spores smaller, 28—32×11—15 μ, very rarely 5-septate; P. larger, to 280 μ diam.; ch. very numerous." (Ciferri, l. c.).

On *Verbena domingensis*, San Domingo, Ekman 3161, type.

No specimens have been available to the present author, who is unable to correlate this variety with other species described on *Verbenaceae*.

(1621) *Asteridiella callicarpae* (Stev. & Rold.) Hansf., Sydowia **10**: 47. 1957.

= *Irenina callicarpae* Stev. & Rold., Philipp. Journ. Sci. **56**: 53. 1935.

Cols. epiphyllous, thin to dense, to 6 mm. diam. or confluent. Hyphae tortuous, cells mostly 30—40×5—6 μ, branching alternate or irregular, rarely opposite, at varying angles, loosely or closely reticulate. Ch. alternate or up to 20% opposite, spreading, straight or slightly bent, 18—35 μ long; stc. cylindric to cuneate, 5—25 μ long; hc. globose to ovate, entire, widely rounded at apex, 12—17×9—14 μ.

Mh. mixed with ch., few, opposite or alternate, ampulliform, 15—23×6—7 μ. P. loosely scattered, to 150 μ diam., surface cells rounded to 15 μ high. Sp. cylindric, obtuse, 4-septate, constricted, 33—38×13—15 μ.

On *Cellicarpa magna*, Philippines, Stevens 1468, 1291 (FLS, CUP); — On *C. pentandra*, Java, BO 12849.

(1622) *Asteridiella lagerheimii* (Gaill.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola lagerheimii* Gaill., Le Genre *Meliola*, 1892, p. 49.

= *Irene lagerheimii* (Gaill.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

= *Irenina lagerheimii* (Gaill.) Stev., l. c., 125: 466. 1927.

Cols. epiphyllous, dense, smooth, to 3 mm. diam. or sometimes confluent. Hyphae substraight to slightly undulate, cells mostly 20—35×7—10 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, often bent and recurved above, 20—30 μ long; stc. cylindric, 4—10 μ long; hc. cylindric with rounded apex, entire, straight or often bent. 12—23×10—13 μ. Mh. mixed with ch. in centre of colony, alternate or opposite, ampulliform, 15—20×7—10 μ. P. in loose central group, verrucose, to 330 μ diam., surface cells rounded, to about 15 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 44—55×18—24 μ.

On *Citharexylum ilicifolium*, Ecuador, Lagerheim, type; Rehm, Ascomyc. 1048; Sydow, Fung. exot. exs. 1140; Sydow, Fung. aequator. 31.

(1623) *Asteridiella pittieri* (Toro) Hansf., Sydowia 10: 49. 1957.

= *Irenopsis pittieri* Toro, Monogr. Univ. Porto Rico, B: 2: 114. 1934.

= *Irenina pittieri* (Toro) Orejuela, Mycologia **36**: 434. 1944.

Cols. mostly epiphyllous to 2 mm. diam. dense, smooth. Hyphae undulate, cells mostly 20—25×7—8 μ, branching opposite, acute, closely reticulate. Ch. alternate, antrorse, usually slightly bent, 15—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. cylindric-clavate, often slightly recurved at apex, entire, 13—18×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×7—8 μ. P. in loose central group, verrucose, to 230 μ diam., surface cells obtusely rounded, to 15 μ high. Sp. cylindric, obtuse, 4-septate, constricted, 38—44×15—18 μ.

On *Duranta repens*, Venezuela, Chardon 371 (type), Chardon & Toro 1618, Kern & Toro 1677, Barrus & Muller 3664 (CUP); Colombia, Obregon 1180 (CUP); Mexico, Goldman 572 (F).

In some colonies there are two or three scattered ms. to 110×5—6 μ, straight, simple, obtuse; these are considered abnormal, and not sufficiently regular in occurrence to warrant transfer to Meliola.

(1624) *Asteridiella formosensis* (Yamam.) Hansf., Sydowia **10**: 48. 1957.

= *Irene formosensis* Yamamoto, Trans. Nat. Hist. Soc. Formosa, **31**: 15. 1941.

Cols. epiphyllous, thin, to 5 mm. diam., smooth. Hyphae undulate, cells mostly 25—42×6—8 μ, branching alternate or irregular, not opposite, at wide angles, loosely interwoven-reticulate. Ch. alternate, antrorse or spreading, more or less bent, 24—38 μ long; stc. cylindric to cuneate, 4—17 μ long; hc. ovoid to ellipsoid, entire, usually bent, 17—22×11—15 μ. Mh. separate, opposite or alternate, ampulliform, 14—23×7—9 μ. P. closely scattered, to 180 μ diam., surface cells conoid or a few produced into obtuse clavate to cylindric processes up to 45 μ long, 21—30 μ diam. at the base, dark brown, continuous. Sp. cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, 40—48×15—19 μ.

On *Callicarpa formosensis*, Formosa, Yamamoto, type (IMI).

(1625) *Asteridiella vilis* Syd. var. *caracasensis* Hansf. Sydowia 10: 61. 1957.

Cols. amphigenous, to 1 mm. diam., often numerous, but rarely confluent, smooth, dense. Hyphae substraight to undulate, cells mostly 20—30×7—8 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 20—28 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. ovate, rately subentire, usually rounded-angulose to sublobate, 14—19×10—16 μ. Mh. separate, opposite or alternate, ampulliform, 15—18×6—8 μ. P. in central group, verrucose, to 230 μ diam., surface cells rounded to obtusely conoid, to 12 μ high. Sp. oblong, obtuse, 4-septate, constricted, 37—42×15—18 μ.

On *Citharexylum subthyrsoideum*, Venezuela, Tamayo 2395, type (CUP); — On *C. cordatum*, Panama, Stevens 979 (FLS).

(1626) *Asteridiella vilis* (Syd.) Hansf. var. *citharexyli* Hansf., Sydowia **10**: 61. 1957.

Cols. amphigenous, dense, smooth, to 1 mm. diam., numerous, but rarely confluent. Hyphae substraight to undulate, cells mostly 15—25×7—9 μ branching opposite or irregular, acute, closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 19—28 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. ovate to clavate, entire, widely rounded at apex, 14—20×10—13 μ. Mh. mostly separate, alternate or less frequently opposite, ampulliform, 15—21×6—8 μ. P. scattered, verrucose, to 180 μ diam., surface cells rounded, to 10 μ high. Sp. oblong to ellipsoid, obtuse, 4-septate, slightly constricted, 39—45×16—19 μ.

On *Citharexylum fruticosum*, San Domingo, Ciferri, Mycofl. doming. exs. 241, type (K).

(1627) *Asteridiella sepulta* (Pat.) Hansf., Sydowia **10**: 50. 1957.
= *Meliola sepulta* Pat. in Stevens, Illinois Biol. Monogr. 2: 14. 1916.
= *Irene sepulta* (Pat.) Toro, Mycologia **17**: 139. 1925.
= *Irenina sepulta* (Pat.) Stev., Ann. Mycol. **25**: 450. 1927.

Cols. hypophyllous, dense, smooth, to 7 mm. diam. Hyphae sinuous to tortuous, partly hidden in dense tomentum of leaf, cells mostly 15—30×5—7 μ, branching irregular, close, densely reticulate-interwoven. Ch. alternate or more scattered, to 30 μ long, usually irregularly bent, spreading or antrorse; stc. cylindric, 5—18 μ long; hc. ovate to clavate, entire or irregularly rounded-angulose to shallowly lobate, 8—14×6—12 μ. Mh. mostly on the more superficial hyphae, mixed with ch., alternate or opposite, ampulliform, 13—18×5—8 μ. P. in loose central group, verrucose, to 180 μ diam., surface cells conoid to mammillate, to 25 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 42—50×18—20 μ, the middle cell slightly the largest.

Epiphyllous colonies are very different, with substraight hyphae, branching opposite, acute, closely reticulate; hc. alternate, 12—20 μ long, antrorse; hc. usually 2—3-rounded-lobate.

On *Avicennia nitida*. Porto Rico, Heller 390 (type). 6416, (FLS, K); Sierra Leone, Deighton 358; Porto Rico, Whetzel 612 (CUP).

(1628) *Asteridiella aegiphilae* Hansf., Sydowia **10**: 46. 1957. (3101.422)
= *Irenina aegiphilae* Hansf., Proc. Linn. Soc. London, **160**: 134. 1948.
= *Meliola renovata* Cif., Mycopathologia **7**: 180. 1954.

Cols. amphigenous, mostly hypophyllous, to 5 mm. diam., dense. Hyphae undulate to crooked, cells mostly 25—40×7 μ, branching alternate or opposite at wide angles, loosely to closely reticulate. Ch. alternate, more or less antrorse, 19—24 μ long, usually straight; stc. cylindric to cuneate, 4—9 μ long; hc. clavate to rounded angulose, usually slightly irregular, 10—18×10—15 μ. Mh. mixed with ch., or often separate, opposite or alternate, ampulliform, 15—19×6—8 μ. P. in loose central group, verrucose, to 240 μ diam.; surface cells obtuse conoid, or produced into erect, subcylindric processes, dark brown, obtuse, not striate, to 45×20 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 34—43×13—17 μ.

On *Aegiphila elata*, San Domingo, Ciferri, Mycofl. doming. exs. 52; Cuba, Wright 406, 563 (K); Wright, Fung. cubenses 883 p. p. (K); Trinidad, Baker in IMI 19361.

(1629) *Asteridiella callista* (Rehm) Hansf., Sydowia **10**: 47. 1957. (3101.4220)
= *Meliola callista* Rehm, Leafl. Philipp. Bot. **6**: 2191. 1914.
= *Irenina callista* (Rehm) Hansf., Proc. Linn. Soc. London **157**: 169. 1946.

Cols. epiphyllous, thin, to 4 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 30—40×5—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate, somewhat antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, often bent, 6—15 μ long; hc. subglobose and entire, to piriform, clavate or rounded-angulose, straight or bent, 12—16×11—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18×7—9 μ. P. scattered or in loose central group, verrucose, to 200 μ diam., surface cells obtuse conoid to mammillate, to 25 μ high by about 40 μ diam. at the base. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—44×14—18 μ.

On *Premna odorata*, Philippines, Baker, Fung. malay. 41 (type), PBS 1940, 1946; — On *P. obtusifolia*, Amboina, Robinson 2181 p. p.; — On *Callicarpa longiflora*, Java, BO 12106; — On *Callicarpa* sp., Philippines, Baker 1813 p. p. (S); — On *Stachytarpheta indica*, Java, BO 14453; — On *S. cayennensis*, Trinidad, Baker in IMI 13255, 21311, 19319; Wakefield T 276; Porto Rico, Stevens 9405, 9480; — On *S. strigosa*, Porto Rico, Heller 6402; —On *S. jamaicensis*, Trinidad, Baker in IMI 6222, 3264, 73; — On *S.* sp., British Guiana, Stevens 129, 392, 496, 879; Ecuador, Stevens 157; Grenada, Thaxter 7393 (F).

(1630) *Asteridiella depokensis* Hansf., Sydowia 10: 47. 1957.

Cols. epiphyllous, to 2 mm. diam., dense, smooth. Hyphae tortuous, cells mostly 15—20×6—7 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, spreading or antrorse, often bent, 20—30 μ long; stc. cylindric, 5—14 μ long; hc. versifrom, irregularly angulose or shallowly lobate, often bent, 12—20×10—20 μ. Mh. few in some colonies, numerous in others, mixed with ch., opposite or alternate, ampulliform, 17—20×7—10 μ. P. scattered, verrucose, to 180 μ diam., surface cells rounded-conoid, to 14 μ gihh. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 37—44×17—19×13—15 μ.

On *Vitex paniculata*, Java, BO 2344, type; — On *Premna subglabra*, Philippines, PBS 47608 (USDA), with straighter hyphae and more uniform hyphopodia.

(1631) *Asteridiella vilis* (Syd.) Hansf., Sydowia **10**: 51. 1957.
= *Meliola vilis* Syd., Leafl. Philipp. Bot. **6**: 1926. 1913.
= *Irene vilis* Syd., Ann. Mycol. **15**: 195. 1917.
= *Irenina vilis* (Syd.) Stev., l. c., **25**: 468. 1927.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. Hyphae undulate to flexuous, cells mostly 17—30×6—7 μ, branching alternate or irregular, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 18—28 μ long; stc. cuneate to cylindric, 4—11 μ long; hc. globose to piriform, entire, 12—17×9—12 μ. Mh. separate or mixed with a few ch. in centre of colony, opposite or alternate, ampulliform, 15—25×6—8 μ. P. scattered, verrucose, to 160 μ diam.,

surface cells obtusely conoid, to 12 μ high. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—40×13—16 μ.

On *Callicarpa blancoi*, Philippines, PBS 13442 (type), 26756. 24056, 23999, 25326, 18470, 14557; Baker, Fung. malay. 257; — On *C. cana*, Philippines, Clemens 6367 p. p., Stevens 537 p. p., 1692, 1696 p. p., 1698 p. p.; — On *C. ereoclona*, Philippines, Stevens 123, 823, with cols. hypophyllous in the dense tomentum of the leaf.

(1632) *Asteridiella premnae* (Hansf. & Deight.) Hansf., Sydowia **10**: 49. 1957.

= *Irenina premnae* Hansf. & Deight., Mycol. Paper, IMI **23**: 68. 1948.

Cols. amphigenous, smooth, thin, to 7 mm. diam. Hyphae straight or slightly undulate, cells mostly 20—30×8 μ, branching opposite or alternate at wide angles, loosely radiating-reticulate. Ch. alternate, straight, antrorse, 14—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. globose to clavate, entire, 9—15×9—13 μ. Mh. mixed with ch., opposite or alternate, straight or bent, conoid to ampulliform, 15—20×7—9 μ. P. scattered, verrucose, to 160 μ diam., surface cells obtuse conoid, to 15 μ high. Sp. oblong, obtuse, 4-septate, constricted, 32—37×11—15 μ.

On *Premna hispida*, Sierra Leone, Deighton 681 (type), 1580.

(1633) *Meliola clerodendri* Hansf., Journ. Linn. Soc. London **51**: 272. 1937.

Cols. epiphyllous, rarely amphigenous, thin to dense, velvety, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 15—40×6—8 μ, branching opposite, acute or wide, loosely to closely reticulate. Ch. alternate or opposite in varying proportions, spreading, straight or slightly bent, 10—17 μ long; stc. cylindric, 2—6 μ long; hc. globose to ovate, entire, 7—12×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—19×6—8 μ. Ms. numerous, straight, to 560×8—9 μ, apex (in Uganda specimens) 2—4-dentate to 15 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×11—14 μ.

On *Clerodendron* sp., Uganda, Hansford 1792 (type), 1844, 2005, 2354, 3314, 3335; Congo Belge, Hendrickx!; Vanderyst 3188, 33170 (BRUX); — On *C. bucholzii*, Sierra Leone, Deighton 496, 1553, 1824; Gold Coast, Deighton CB 758, 872; — On *C. scandens*, Sierra Leone, Deighton 1885, 1826; — On *C. paniculatum*, Sierra Leone. Deighton 1062; — On *C. capitatum*, Gold Coast, Hughes in IMI 43563, 43587;.

In the West African collections the spores are slightly larger, 35—41×11—13 μ; ch. vary from almost all alternate to about 50% opposite; ms. from simple and subacute to nearly all dentate.

(1633-a) *Meliola petraeoviticis* Deight., Sydowia **11**: 42. 1958.

Cols. amphigenous, mostly epiphyllous, dense, velvety, to 3 mm.

diam. or nimerous and confluent. Hyphae substraight, branching opposite, acute, closely reticulate and becoming almost solid, cells mostly 12—30×7—10 μ. Ch. alternate, antrorse, straight or slightly bent, 16—28 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. subglobose to clavate, straight or slightly bent, entire or more or less rounded-angulose to lobate, 11—20×11—18 μ. Mh. separate, opposite or alternate, ampulliform, 12—20×7—9 μ. Ms. numerous, scattered, straight or slightly bent, to 450×8—11 μ, rarely simple and acute, mostly 2—3-dentate to 12 μ, sometimes 2-furcate to 20 μ with the branches dentate. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—37×14—16×11—13 μ.

On *Petraeovitex* sp., Malaya, Johnston 1648, type (IMI 63958).

(1634) *Meliola pseudocapensis* Hansf., Sydowia **o**: 23. 1955.

Cols. epiphyllous, thin, to 3 mm. diam. or confluent, subvelvety. Hyphae substraight, cells mostly 20—30×7—8 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. opposite save where too crowded, spreading, straight or slightly bent, 15—21 μ long; stc. cylindric, 2—5 μ long; hc. cylindric, apex rounded or somewhat attenuate, entire, straight or slightly bent, 11—15×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—22×8—9 μ. Ms. thinly scattered and grouped around P., straight, simple and subacute, or 2—3-dentate to 5 μ, to 800×11—13 μ. P. scattered, verrucose, to 180 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 38—45×17—20 μ.

On ? *Aegiphila* sp.. Brazil, Ule, App. mycoth. bras. 17 (S).

(1635) *Meliola cookeana* Speg. var. **viticis** Hansf., comb. n.

= *Meliola clerodendricola* P. Henn. var. *viticis* Hansf.. Proc. Linn. Soc. London **153**: 9. 1941.

= *Meliola rizalensis* Syd. var. *viticis* (Hansf.) Hansf. & Deight., Mycol. Paper, IMI **23**: 70. 1948.

= *Meliola clerodendri* Yamam., Trans. Nat. Hist. Soc. Formosa **30**: 418. 1940. (non Hansf., 1937).

Cols. chiefly epiphyllous, to 5 mm. diam., velvety, subdense. Hyphae substraight to undulate, cells mostly 15—30 μ long, 6—7 μ thick, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 14—20 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. globose to ovate, entire, 10—15×9—12 μ. Mh. mixed with ch., few to numerous, opposite or alternate, ampulliform, 14—23×7—8 μ. Ms. numerous, scattered, straight, simple or 2—3-furcate to 35 μ, tips always obtuse, to 250×6—9 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—38×12—14×11—12 μ.

On *Vitex cienkowskii*, Uganda, Hansford 799 (type); — On *Clerodendron serratum*, Java, BO 10932, 12093, 12095, 12445, 12555, 12556, 15235; — On *C. incisum* var. *macrosiphon*, Java, BO 11728,

4910; Malaya, Johnston 1631; — On *C. inerme*,Java, BO 4661; — On *C.* sp., Java, BO 46, 4892; — On *C. cyrtophyllum*, Formosa, Yamamoto (type of *M. clerodendri* in IMI).

(1636) *Meliola cookeana* Speg. var. **aegiphilae** (Stev.) Hansf., comb. n.

= *Meliola aegiphilae* Stev., Ann. Mycol. 26: 208. 1928.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., subdense. Hyphae undulate to crooked, cells mostly 15—25×5—7 μ, branching alternate or opposite, closely reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 9—15 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. globose to ovate, entire, 7—13×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 10—15×6—8 μ. Ms. scattered, to 250×7—8 μ, simple and obtuse, or sometimes with 2 obtuse branches to 25 μ long. P. scattered, verrucose, to 120 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 25—30×9—11 μ.

On *Aegiphila* sp., British Guiana, Stevens 221 (FLS, F), type.

(1637) *Meliola lippiae* Maubl., Bull. Soc. Myc. France **19**: 291. 1903.

Cols. epiphyllous, to 1 mm. diam., dense. Hyphae undulate to sinuous, cells mostly 20—25×8—10 μ, branching opposite or irregular, acute, closely reticulate and nearly solid. Ch. alternate, antrorse, straight or bent, 21—32 μ long; stc. cuneate, 4—12 μ long; hc. ovate, entire, rounded or slightly pointed at apex, 15—23×10—13 μ. Mh. separate in centre, few, opposite or alternate, ampulliform, 18—22×9—10 μ. Ms. few to numerous, scattered, simple, obtuse, to 280×12—13 μ, uncinate to loosely coiled in upper half. P. in central group, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 33—39×13—16 μ.

On *Lippia* sp., Dahomey, Le Testu, type; — On *L. adoensis*, Sierra Leone, Deighton 3585.

(1638) *Meliola callicarpicola* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 226. 1941.

Cols. epiphyllous, loosely to closely scattered, to 4 mm. diam., thin. Hyphae undulate to sinuous, cells 25—37×6—7 μ, branching opposite, loosely reticulate. Ch. alternate or rarely opposite, 15—21 μ long; stc. 4—8 μ long; hc. globose to ellipsoid, 10—14×8—10 μ, entire. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23×6—8 μ. Ms. fairly numerous, mostly around P., straight or slightly bent, simple, to 460×8—9 μ. P. loosely grouped in centre of colony, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—42×12—17 μ.

On *Callicarpa formosana*. Formosa, Yamamoto, type. — On *Clerodendron infortunatum*, India, Butler in Herb. Crypt. Ind. Or., with ms. somewhat torulose below the obtuse apex.

(1639) *Meliola symphoremae* Stev. & Rold., Philipp. Jorun. Sci. **56**: 61. 1935.

Cols. hypophyllous, to 10 mm. diam., thin. Hyphae undulate, cells mostly 12—25×6 μ, branching opposite or alternate at wide angles. loosely reticulate. Ch. opposite or alternate, spreading, usually bent, 13—20 μ long; stc. cylindric, 3—8 μ long; hc. ovate to oblong, entire or somewhat rounded-angulose, often bent, 10—14×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—24×6—8 μ. Ms. fairly numerous, scattered, straight, simple, obtuse or acute, to 600×8—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×14—16 μ.

On *Symphorema luzonicum*, Philippines, Stevens 655, type (FLS, CUP), 62 p. p.

(1640) *Meliola callicarpae* Syd., Ann. Mycol. **10**: 80. 1912. (3113.3223)

Cols. epiphyllous, subdense, thinly velvety, to 3 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 12—20×5—7 μ, closely reticulate, branching opposite at wide angles. Ch. alternate or to 50% opposite, more or less antrorse. usually straight, 10—15 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. subglobose to ovate, entire, 7—11×6—9 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 14—18×6—8 μ. Ms. scattered, straight, simple, acute, to 580×9—10 μ. P. scattered, verrucose, to 130 μ diam., Sp. oblong, obtuse, 4-septate, constricted, 30—38×13—15 μ.

On *Callicarpa cana*, Philippines, PBS 7421 (type), 27794, 24031, *Clemens* 6367 p. p., *Stevens* 225. 506, 515, 976, 508, 1683; — On *Premna cumingiana*, Philippines, Baker, Fung. malay. 43, Baker 2395, PBS 25313; — On *P. tomentosa*, Java, BO 14461.

(1641) *Meliola ambigua* Pat. & Gaill., Bull. Soc. Myc. France **4**: 104. 1888.

= *Meliola lantanae* Syd., Mem. Soc. Neuchatel Sci. Nat. **5**: 434. 1913.

= *Meliola sakawensis* P. Henn. var. *major* Hansf., Journ. Linn. Soc. London **51**: 544. 1938.

Cols.epiphyllous, dense, often confluent, 1 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—25×8—9 μ, branching opposite or irregular at varying angles, closely radiating-reticulate. Ch. alternate, usually straight, more or less closely antrorse, 23—30 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. ovate, entire, rounded or slightly pointed at apex, 13—21×10—13 μ. Mh. few, separate, mostly alternate, ampulliform, 20—28×8—9 μ. Ms. thinly scattered and grouped around P., straight, simple, obtuse to acute, to 330×8—9 μ. P. in close central group, slightly verrucose, to

240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—43×13—16 μ.

On *Verbena* sp., Ecuador, Lagerheim (S); — On *Lantana* sp., Venezuela, Gaillard 184, type (F); — On *Lantana* sp., Uganda, Hansford 2151, 3532, with sp. 37—45×13—15 μ; — On *L. trifolia*, Uganda, Hansford 1077, 1843, 2132, 2258, etc.; San Domingo, Ciferri 2275, Ekman 3019; Venezuela, Kern & Toro 1762 (CUP); — On *L. hispida*, Colombia, Mayor (S), type of *M. lantanae;* Costa Rica, Sydow, Fung. exot. exs. 614; — On *L. camara*, Porto Rico. Stevens 8016, 8025, 7806, Whetzel 2590; Venezuela, Chardon & Stelling 843 (CUP); Ecuador, Lagerheim (F); — On *L. stricta*, Jamaica, Dennis (K); — On *L. odorata*, Porto Rico, Heller 6249, Stevens 7268, 7267; — On *L. aculeata*, San Domingo, Ciferri 2578 (S); — On *L. involucrata*, San Domingo, Ekman 4546; Ciferri, Mycofl. doming. exs. 302 (CUP); — On *L.* spp. indet., Costa Rica. Stevens 480, Standley 33379, 41378; Panama, Stevens 145, 923, 480, 1344; Porto Rico, Stevens 6870, 6052, 8016, 7806, 8025, 5008; Ecuador, Stevens 326; Brazil, Rick in F; Jamaica, Thaxter 7326, 7254 (F); Florida, Thaxter 7522 (F); — On *Lippia reptans*, Porto Rico, Heller 6268; — On *L. nodiflora*, Bermuda, Waterston 232, Whetzel 181, Ogilvie 171; Venezuela, Chardon & Toro 355 (CUP); Porto Rico, Whetzel 2572 (CUP); — (?) on *Petitia domingensis*, San Domingo, Ciferri 2578-bis (S).

(1642) *Meliola premnae* Hansf., Proc. Linn. Soc. London **160**: 135. 1948.

Cols. caulicolous, to 3 mm. diam. or confluent, subdense. Hyphae substraight to undulate, cells mostly 20—30×6 μ, branching opposite or irregular, acute, closely reticulate in centre. Ch. alternate, substraight, more or less closely antrorse, 16—28 μ long; stc. cuneate, to cylindric, 6—11 μ long; hc. from short and widely triangular to more elongate, ovate and entire, 10—17×9—13 μ. Mh. mostly separate, alternate or opposite, ampulliform, 12—18×6—8 μ. Ms. mostly grouped around P., erect, flexuous, crooked or loosely twisted, not uncinate, simple, obtuse, to 150×7—8 μ. P. in loose central group, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—34×10—12 μ.

On *Premna odorata*, Philippines, Baker, Fung. malay. 41-supplt. (type), PBS 25277, 22216, 1830, 2110-a; — On *P. nauseosa*, Philippines, PBS 23889 (S, F); — On *Symphorema luzonicum*, Philippines, Stevens 74, 62 p. p.

(1643) *Meliola viticicola* Hansf., Recueil I.N.E.A.C. 2: 41. 1945.

Cols. hypophyllous, thin, to 10 mm. diam. Hyphae sinuous, cells mostly 35—45×6—7,5 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, spreading, straight or bent, 12—50 μ long; stc. cylindric, 2—40 μ long, the longer ones flexuous; hc. piriform

to ovate or rarely somewhat angulose, 7—13×7—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—25×7—9 μ, neck elongate. Ms. mostly grouped around P., straight or flexuous, not uncinate, simple, obtuse, to 240×7—8 μ, sometimes slightly torulose below apex. P. scattered, verrucose, to 150 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 31—35×12—14 μ.

On *Vitex* sp., Congo Belge, Hendrickx 2390, type.

(1644) *Meliola clerodendricola* P. Henn., Hedwiga **37**: 288. 1895.
= *Meliola sakawensis* P. Henn., l. c., **43**: 141. 1904.
= *Meliola sakawensis* P. Henn. var. *longispora* Beeli, Bull. Jard. Bot. Bruxelles **7**: 98. 1920.

Cols. epiphyllous, rarely amphigenous, usually numerous and confluent over the leaf, velvety, dense, to 3 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—30×6—7 μ, branching alternate or opposite, acute, densely radiating-reticulate. Ch. alternate, more or less antrorse, 14—20 μ long; hc. more or less globose, entire, 10—13×8—12 μ, sometimes ovate, rounded or slightly pointed at apex. Mh. mixed with ch., opposite or alternate, ampulliform, 14—20×7—9 μ. Ms. numerous, substraight, simple, obtuse, scattered closely over whole colony, to 250×6—8 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—35×11—15 μ.

On *Clerodendron* sp., Tropical Africa, Schweinfurth 2753 (type) (Berlin, S); Uganda, Maitland 229, 271, Small 461, Dummer 3014, Hansford 1757, 1959, 2015, 2026, 2130, 2255, 2525, 2596, 3034. etc.; Celebes, Robinson 2466; Penang, Burkill 4142 (K); Congo Belge, Vanderyst 21809, 21813, 23723 (BRUX); Philippines, PBS 36470; — On *C. capitatum*, Gold Coast, Deighton CB 1013; Congo Belge, Vanderyst 34386, 43100, 43117, 43136, 43140; — On *C. glabrum*, Sierra Leone, Deighton 1225; — On *C. volubile*, Sierra Leone, Deighton 1749, 1577; — On *C. speciosissimum*, Amboina, Robinson 2124; — On *C. speciosum*, San Domingo, Ciferri 2746; — On *C. intermedium*, Philippines, Stevens 1985, 337; — On *C. cumingianum*, Philippines, PBS 32135; — On *C. minahassae*, Philippines, Robinson 2539, Sydow, Fung. exot. exs. 171, 370, BPS 8688, 23914, 25346, 26754, 16764; — On *C. scandens*, Cameroons, Jacques-Felix 4568 (P); — On *C. formicarium*, Cameroons, Jacques-Felix 4846 (P); — On *C. tuberculatum*, Cuba, Kevorkian 214 (F); — On *C. trichostomum*, Japan, Yoshinawa, type of *M. sakawensis* (S); — On *C.* sp., Congo Belge, Vanderyst 2065, type of *M. sakawensis* var. *longispora*. (BRUX); Samoa, Rechinger in Herb. Hochnel (F); — On *C. canescens*, Tonkin, Bon 5857 (Herb. Patouillard in F).

(1645) *Meliola clerodendricola* P. Henn. var. **micromera** (Syd.) Hansf., comb. n.
= *Meliola micromera* Syd., Ann. Mycol. Berlin **12**: 552. 1914.

Cols. amphigenous, to 1 mm. diam., usually numerous and widely confluent, subdense. Hyphae substraight to sinuous, cells mostly 20—30×6—7 μ, branching opposite, acute, closely interwoven-reticulate. Ch. alternate, more or less antrorse, usually straight, 12—20 μ long; stc. cuneate to cylindric, 3—10 μ long; hc. ovate, clavate or subglobose, entire, 9—13×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 10—15×7—8 μ. Ms. few, scattered, straight or slightly bent, simple, obtuse, to 200×8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—31×10—12 μ.

On *Gmelina philippinensis*, Philippines, PBS 21807 (type), 25895, Petrak, Mycoth. gener. 1957; — On *G. elliptica*, Java, BO 12825.

(1646) *Meliola cookeana* Speg., Anal. Soc. Cient. Argentina **12**: 41. 1881.

= *Meliola rizalensis* Syd., Ann. Mycol. **12**: 551. 1914.

Cols. epiphyllous, to 1 mm. diam., numerous and widely confluent. Hyphae sinuous to crooked, cells mostly 15—25×5—7 μ, branching alternate or irregular, rarely opposite, acute, closely radiating-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 11—16 μ long; stc. cuneate to cylindric, 2—6 μ long; hc. globose to ovate, entire, 10—14×8—10 μ. Mh. mixed with ch., few, alternate or opposite, ampulliform, 12—15×6—8 μ. Ms. mostly grouped around P., straight or flexuous, sometimes arcuate, simple, obtuse, to 250×7—8 μ. P. in central group, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28-33×11—12 μ.

On *Callicarpa* sp., Florida, Ravenel, Fung. amer. 84 (type); Ravenel 123, Ellis, N. Amer. Fung. 1295; Tracy 7306 (CUP); — On *Callicarpa cana*, Philippines, Baker 481, 1813 p. p. (S), Stevens 537 p. p., 619 971, 1696 p. p. — On *C. oreoclona*, Philippines, Stevens 823 p. p.; — On *C.* sp., Philippines, Stevens 2023; — On *Vitex parviflora*, Philippines, PBS 294 — Sydow, Fung. exot. exs. 379, type of *M. rizalensis*; PBS 23971, 24629; — On *Vitex cuneata*, Sierra Leone, Deighton 987. 1551, 1766; — On *V. leucoxylon*, Bombay, Sedgwick in Herb. Crypt. Ind. Or.; — On *V. cienkowskii*, Sierra Leone, Deighton 564; — On *V. micrantha*, Sierra Leone, Deighton 615, 2234; — On *V.* sp., Congo Belge, Vanderyst 38577, 43953, 44309, 44340 BRUX); — On *Premna canescens*, Java, BO 12553; — On *Clerodendron trichotomum*, Formosa, K. Sawada in USDA, type of *Meliola clerodendri* Yamam. var. simpliciseta Sawada (the present author has been unable to trace publication of this variety).

(1646) *Meliola thomandersiae* Hansf., Sydowia **11**: 59. 1958.

Cols. epiphyllous, to 2 mm. diam., dense. Hyphae substraight, branching opposite, acute, closely reticulate, cells mostly 15—28×7—10 μ. Ch. alternate, antrorse, mostly straight, 17—24 μ long; stc. cuneate, 4—8 μ long; hc. subglobose to piriform, usually widely

rounded at apex, entire, 11—17×10—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—22×7—9 μ. Ms. grouped around P., usually few, substraight, simple, obtuse, to 170×7—9 μ. P. in central group, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 30—37×13—15×11—13 μ.

On *Thomandersia laurifolia*, Congo Belge, Steyaert 44102 (IMI 48131), type, Meyer 232 (IMI 62447).

(1648) *Meliola cantareirensis* Hansf., Sydowia **10**: 66. 1957.

Cols. epiphyllous, to 5mm. diam., thin. Hyphae substraight, to undulate, cells mostly 30—45×6—7 μ, branching alternate or irregular, not opposite, acute, loosely radiating-reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 19—23 μ long; stc. cylindric or cuneate, 5—8 μ long; hc. subglobose to ovate, entire or often slightly rounded-angulose, 14—17×10—13 μ. Mh. separate in centre of colony, closely crowded on hyphae with short cells, opposite or alternate, ampulliform, 16—20×7—8 μ. Ms. few, in small groups around P., more or less straight, simple, obtuse, to 240×6—7 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×13—15 μ.

On *Vitex montevidensis*, Brazil Puttemans 202 (CUP), type.

(1649) *Meliola petitiae* Hansf., Sydowia **9**: 72. 1955.

Cols. epiphyllous, to 5 mm. diam. or confluent, rather thin. Hyphae undulate, cells mostly 25—30×6—7 μ, branching opposite or irregular at wide angles, loosely to rather closely interwoven-reticulate. Ch. alternate, antrorse or spreading, straight or bent, 25—34 μ long; stc. cylindric or cuneate, 7—15 μ long; hc. ovate to narrowly clavate, entire, 14—20×10—14 μ. Mh. separate, closely crowded, mostly opposite, ampulliform, 13—19×6—9 μ. Ms. thinly scattered and grouped around P., substraight, simple, obtuse, to 250×7—8 μ. P. scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—40×14—15 μ.

On *Petitia domingensis*, San Domingo, Ciferri 2822, type (S).

(1650) *Meliola paraensis* P. Henn., Hedwigia **39**: 77. 1900.

Cols. amphigenous, thin, to 5 mm. diam. or confluent. Hyphae on upper surface straight, on lower surface crooked, cells mostly 20—30×5—6 μ, branching opposite, acute, loosely reticulate-interwoven. Ch. alternate, somewhat antrorse, straight, 12—18 μ long; stc. cuneate to cylindric, 3—6 μ long; hc. globose to wide ovate, entire, 9—12×8—10 μ. Mh. mixed with ch., or mostly separate, opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. thinly scattered and grouped around P., straight or flexuous, not uncinate, simple, obtuse, to 260×6—8 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 23—28×9—11 μ.

On *Vitex* sp., Para. Huber 4, type (S, ex Berlin).

(1651) *Meliola durantae* Gaill., Bull. Soc. Myc. France 8: 181. 1892.

Cols. amphigenous, dense, to 2 mm. diam. or numerous and confluent. Hyphae substraight, cells mostly 20—25×7 μ, branching opposite. acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or bent, often slightly reflexed at apex, 20—27 μ long; stc. cylindric, 3—6 μ/long; hc. oblong to piriform, entire, straight or bent, 15—21×8—10 μ. Mh. few, mixed with ch., alternate or opposite. ampulliform, 16—21×6—8 μ. Ms. thinly scattered, and grouped around P., few, straight, simple, acute, to 430×6—9 μ. P. scattered, verrucose, to 220 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 43—51×16—19 μ.

On *Duranta* sp., Ecuador, Lagerheim (S), Rehm, Ascomyc. 1095 (S); — On *D. benthami*, Ecuador, Sydow, Fung. exot. exs. 1139, with sp. 38—44×16—19 μ.

(1652) *Meliola durantae* Gaill. var. *lippiae* Cif., Ann. Mycol. **31**: 146. 1933.

Cols. amphigenous, dense, to 2 mm. diam., slightly velvety. Hyphae substraight to slightly undulate, cells mostly 15—20×7—8 μ, branching opposite, wide, closely reticulate. Ch. alternate, more or less antrorse, 17—25 μ long, usually straight; stc. cuneate to cylindric, 4—8 μ long; hc. cylindric to narrowly ovate, entire, rounded at apex, 11—17×8—10 μ. Mh. few, usually separate in centre of colony, opposite or alternate, ampulliform, 12—18×7—9 μ. Ms. numerous, scattered, straight, simple, acute, to 440×7—9 μ. P. closely scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 29—35×11—13 μ.

On *Lippia nodiflora*, San Domingo, Ciferri, Mycofl. doming. exs. 165 (type); Ekman 2848, 4607; Florida, Tracy 7300; — On *Lippia* sp., Bermuda, Thaxter in F, Whetzel 34587 (CUP).

(1653) *Meliola durantae* Gaill., var. **acutiseta** Hansf., comb. n. = *Meliola sakawensis* P. Henn. var. *acutiseta* Hansf., Proc. Linn. Soc. London **153**: 11. 1941.

Cols. epiphyllous and caulicolous, thin, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 18—25×7—8 μ, branching opposite, acute, loosely reticulate. Ch. alternate, more or less closely antrorse, straight or slightly bent, 22—27 μ long; stc. cuneate, 6—9 μ long; hc. cylindric, ovate or clavate, broadly rounded at apex, 13—18× 10—15 μ. Mh. separate, opposite or alternate, ampulliform. Ms. scattered, straight, simple, acute, to 480×7—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 31—39×12—16 μ.

On *Clerodendron* sp., Uganda, Hansford 1920 (type), 2016.

Appendiculella

3201.3230 Cols. thin; hyphae undulate; hc. ovate-subglobose, entire; app. to 57 μ long ..... *labiatarum* (1654)

Asteridiella

3101.3220 Cols. thin; hyphae undulate to tortuous; hc. globose-ovate, entire ..... *anastomosans* (1655)

Meliola

3133.3221 Cols. dense, velvety; hyphae tortuous; hc. globose-ovate, entire; ms. furcate-dentate ... *pycnostachydis* (1656)

3113.3221 Cols. dense; hyphae tortuous; hc. subglobose, entire; ms. acute ..... *achyrospermi* (1657)

3111.4221 Cols. thin; hyphae sinuous to croked; hc. subglobose-ovate, entire; ms. obtuse to clavulate ..... *prostantherae* (1658)

3111.4221 Cols. dense; hyphae undulate; hc. ovate, entire; ms. obtuse ..... *ambigua* (1659)

3111.3222 Cols. subdense; hyphae substraight; hc. subglobose-ovate, entire; ms. obtuse ..... *capnodioides* (1660)

3111.3222 Cols. thin, subvety; hyphae undulate to sinuous; hc. narrow ovate-clavate, entire; ms. obtuse ..... *pogostemonis* (1661)

3111.3221 Cols. thin; hyphae undulate to crooked; hc. globose-ovate, entire; ms. obtuse ..... *hyptidis* (1662)

3111.4223 Cols. thin; hyphae substraight to flexuous; hc. ovate to sublobate; ms. acute..... *plectroniae* (1663)

(1654) **Appendiculella labiatarum** Hansf., nom. n.

= *Irene inermis* (K. & C.) Theiss. & Syd. var. *minor* Hansf. & Stev., Journ. Linn. Soc. London **51**: 266. 1937.

= *Meliola hyptidicola* Stev. var. *wombalensis* Beeli, Bull. Jard. Bot. Bruxelles **7**: 95. 1920.

= *Irenina hyptidicola* Stev. var. *wombalensis* (Beeli) Stev., Ann. Mycol. **25**: 255. 1927.

Cols. epiphyllous, rarely hypophyllous, to 3 mm. diam., numerous and sometimes confluent. Hyphae undulate, cells 18—25×6—8 μ, branching alternate, acute, loosely to closely radiating-reticulate. Ch. alternate, antrorse, straight or slightly bent, 19—27 μ long; stc. cuneate, 5—10 μ long; hc. ovate to subglobose, usually entire, 12—17×9—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×7—9 μ. Ms. none. P. in central close group, verrucose, to 230 μ diam.; app. 4—6, erect, straight or curved, obtuse, opaque dark brown, transversely 2—3-septate and constricted at septa, smooth on surface, 37—57×15—20 μ. Sp. oblong, obtuse, 4-septate, constricted, 29—35×11 13—μ.

On *Labiatae* indet., Uganda, Hansford 1076, type; — On ? *Coleus* sp., Uganda, Hansford 1134; — On *Hyptis pectinata*,

Uganda, Hansford 1330, 2823; — On *Hyptis* sp., Congo Belge, Vanderyst 2062 (type of *M. hyptidicola* var. *wombalensis*), 21810, 32326, 32573 (BRUX).

(1655) **Asteridiella anastomosans** (Wint.) Hansf., comb. n.
=*Meliola anastomosans* Wint., Hedwigia **25**: 96. 1886.
= *Irene anastomosans* (Wint.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.
= *Irenina anastomosans* (Wint.) Stev., l. c., **25**: 456. 1927.
= *Meliola hyptidicola* Stev., Illinois Biol. Monogr. **2**: 16. 1916.
= *Irene hyptidicola* (Stev.) Toro, Mycologia **17**: 139. 1925.
= *Irenina hyptidicola* Stev., Ann. Mycol. **25**: 455. 1927.

Cols. epiphyllous, closely scattered and sometimes widely confluent, 1 mm. diam., smooth, thin. Hyphae undulate to tortuous, cells mostly 10—20×7—8 μ, branching alternate, rarely opposite, at wide angles. loosely reticulate. Ch. alternate, more or less antrorse, usually straight, 15—25 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. globose to wide ovate, entire, 12—16×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 12—18×7—10 μ. P. in central group, verrucose, to 150 μ diam., surface cells rounded-convex, to 12 μ high. Sp. oblong, obtuse, 4-septate, constricted, 28—35×12—14 μ.

On *Labiatae* indet., San Thome, Moller, type (S); — On *Pogostemon menthoides*, Java, BO 12698, 13211, 17423; — On *Plectranthus javanicus*, Java, BO 17420; — On *Hyptis lantanifolia*, Porto Rico, Stevens 8130 (type of *M. hyptidicola*); — On *Hyptis capitata*, Porto Rico, Stevens 8526; — On *H. pectinata*, Porto Rico, Stevens 7981, 8791; — On *H.* sp., Porto Rico, Stevens 5760; Brazil, Ule, Herb. brasil. 2417 (S); Venezuela, Chardon & Toro 867, Chardon 2795, Toro 73 (CUP); Ecuador, Stevens 310, 171; Costa Rica, Stevens 418, 420, 672; — On *H. atrorubens*, Porto Rico, Whetzel 2520 (CUP); — On *H. capitata*, Porto Rico, Whetzel 2517, Chardon 862; — On *Gomphostemma* sp., Philippines, PBS 30110; — On *Coleus barbatus*, Uganda, Hansford 3393, 1357, 2023, Dummer 2340.

Toro in Monogr. Univ. Porto Rico, B: 2: 114, 1934, makes the new comb. *Irenopsis anastomosans* (Wint.) Toro; it is probable that he had some collection other than the type, and from his measurements of the perithecial setae "25—34×15—17 μ, 2-septate", his fungus could have been *Appendiculella labiatarum* Hansf., above, though this has so far been recorded only from Africa.

(1656) *Meliola pycnostachydis* Hansf., Journ. Linn. Soc. London **51**: 543. 1938.

Cols. amphigenous, mostly hypophyllous, dense, velvety. Hyphae sinuous to tortuous, cells mostly 18—30×6—7 μ, branching opposite, wide, closely interwoven-reticulate. Ch. alternate or opposite, spreading, straight or slightly bent, 11—16 μ long; stc. cylindric to cuneate,

2—5 μ long; hc. globose to ovate, entire, 8—12×7—12 μ. Mh. separate or mixed with a few ch., opposite or alternate, ampulliform. Ms. numerous, scattered, straight, to 260×7—8 μ, apex 2—3-furcate-dentate to 20 μ. P. scattered, verrucose, to 160μ diam. Sp. oblong, obtuse, 4-septate, constricted, 32—37×12—14 μ.

On *Pycnostachys* sp., Uganda, Hansford 2100, type; — On *Achyrospermum axillaris*, Uganda, Hansford 2719.

(1657) *Meliola achyrospermi* Hansf. & Deight., Mycol. Paper, IMI **23**: 70. 1948.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae sinuous to tortuous, cells mostly 15—25×6—7 μ, branching opposite or irregular, at wide angles, closely reticulate. Ch. alternate or opposite, spreading, 12—16 μ long, straight or slightly bent, stc. cylindric to cuneate, 2—5 μ long; hc. subglobose, entire, 8—12×8—11 μ. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform. Ms. scattered, few to numerous, straight, simple, acute, to 280×7—9 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 28—33×10—12 μ.

On *Achyrospermum oblongifolium*, Sierra Leone, Deighton 1400, type.

(1658) *Meliola prostantherae* Hansf., Proc. Linn. Soc. N.S.W., **78**: 59. 1953.

Cols. epiphyllous, numerous and confluent over leaf, to 1 mm. diam., rather thin. Hyphae sinuous to crooked, cells mostly 20—30×6 μ, branching opposite, acute, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 16—23 μ long; stc. cylindric or cuneate, 3—7 μ long; hc. subglobose to wide ovate, entire, 11—15×8—11 μ. Mh. mostly separate, opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. thinly scattered, simple, obtuse to clavulate, straight, to 220×6—7 μ. P. loosely scattered, verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—40×13—15 μ.

On *Prostanthera sieberi*, New South Wales, Fraser 28, type.

(1659) *Meliola ambigua* Pat. & Gaill., Bull. Soc. Myc. France, **4**: 104. 1888.

Cols. epiphyllous, dense, minute, numerous and confluent. Hyphae undulate, cells mostly 15—20×7—8 μ, branching opposite or irregular, acute, closely radiating-reticulate. Ch. alternate, closely antrorse, straight or slightly bent, 19—28 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. ovate, entire, 13—18×8—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. thinly scattered, more or less straight, simple, obtuse, to 280×8—9 μ. P. closely scattered, or in a central group, verrucose, to 170 μ diam., surface cells rounded to obtuse conoid. Sp. oblong to subellipsoid, 35—42×13—16 μ.

On *Labiatae* indet., Brazil, Theissen, Decades fung. brasil.

297 (S); Congo Belge, Vanderyst 32446 (BRUX); — On *Ocimum obtusifolium*, South Africa, Wood 545 (K).

(1660) *Meliola capnodioides* Thuem., Flora **59**: 569. 1876.

= *Meliola cavitensis* Yates, Philipp. Journ. Sci., C. Botany, **13**: 366. 1916.

= *M. microspora* Pat. & Gaill. var. *africana* Doidge, Trans. Roy. Soc. South Africa **5**: 732. 1917.

Cols. amphigenous, mostly epiphyllous, to 1 mm. diam., subdense. Hyphae substraight to slightly undulate, cells mostly 15—20×7—8 μ, branching usually opposite at wide angles, closely reticulate and nearly solid in some colonies. Ch. alternate, more or less antrorse, straight, 15—21 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. subglobose to wide ovate, entire, apex groadly rounded to somewhat pointed, 10—14×9—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 12—18×7—9 μ. Ms. few, scattered, straight or slightly flexuous, simple, obtuse, to 320×6—8 μ. P. few, often single, central, verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 27—34×12,5—15 μ.

On *Plectranthus ciliatus*, South Africa, Wood 22, Wager 186, MacOwan 1259 (type); — On *Ocimum* sp., Uganda, Hansford 1866; — On *Coleus* sp., Philippines, PBS 10634 (type of *M. cavitensis*); — On *Labiatae* indet., Uganda, Dummer 2860.

(1661) *Meliola pogostemonis* Hansf., Sydowia **10**: 83. 1957.

Cols. epiphyllous, thin, subvelvety, to 1 mm. diam. Hyphae undulate to sinuous, cells mostly 25—35×6 μ, branching opposite, acute. loosely to rather closely reticulate. Ch. alternate, antrorse, usually straight, 17—26 μ long; stc. slightly cuneate, 5—9 μ long; hc. narrowly ovate to clavate, entire, broadly rounded or slightly pointed at apex, 12—18×7—10 μ. Mh. mixed with ch. in centre of colony, opposite or alternate, ampulliform, 20—24×6—9 μ. Ms. rather numerous, evenly scattered, straight or slightly flexuous, simple, obtuse, to 320×7 μ. P. in central group, verruculose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 27—35×11—13 μ.

On *Pogostemon heyneanus*, Ceylon, Herb. Peradeniya 5205 (type), 5100.

(1662) *Meliola hyptidis* Syd., Ann. Mycol. Berlin **8**: 36. 1910.

Cols. amphigenous, mostly epiphyllous, to 1 mm. diam., thin, often numerous and widely confluent. Hyphae undulate to crooked, cells mostly 15—20×4—6 μ, branching opposite or irregular at wide angles, loosely to rather closely reticulate. Ch. alternate, spreading or antrorse, usually straight, 10—15 μ long; stc. cylindric to cuneate, 2—7 μ long; hc. globose to ovate, entire, 7—13×7—11 μ, rarely slightly angulose. Mh. few to numerous, mixed with ch., opposite or alternate, ampulliform, 12—16×5—7 μ. Ms. few, mostly grouped around P., straight or slightly flexuous, simple, obtuse, to 200×5—6 μ,

sometimes very slightly swollen at apex. P. loosely aggregate in centre, verucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 25—33×9—12 μ.

On *Hyptis suaveolens*, Philippines, PBS 6242 (type), 24005, 24067, 14891, Sydow, Fung. exot. exs. 373, 374; — On *H. capitata*, Philippines, Stevens 1560; 1548, 1335; — On *Ocimum viride*, Sierra Leone, Deighton 1316, 1409, 247, 1217; Gold. Coast, Deighton CB 742; — On *Hoslundia opposita*, Uganda, Hansford 2164; Hansford 3535, 984, 1072, 1188, 2828, with sp. 34—40×12—14 μ; Gold Coast, Hughes in IMI 39550, 39535, 39547, 39546, 39548, 39549; — On *Platystoma africanum*, Gold Coast, Hughes in IMI 43212; — On *Leucas* sp., Philippines, Stevens s. n.; — On *Labiatae* indet., Brazil, Rabh. Fung. europ. 3847, with setae acute, to 320 μ long; Congo Belge, Vanderyst 39848; Venezuela, Gaillard 12.

(1663) *Meliola plectroniae* Hansf., Sydowia 9: 72. 1955.

Cols. hypophyllous, thin, slightly velvety, to 5 mm. diam., Hyphae substraight to flexuous, cells mostly 25—40×7—9 μ, branching opposite or irregular at varying angles, loosely interwoven-reticulate. Ch. alternate, crooked, 25—70 μ long; stc. cylindric, irregularly bent and often 1—3-septate, 8—60×7—9 μ, often resembling short mycelial branches; hc. versiform, often uncinate, ovate and subentire, to variously angled or sublobate, 13—29×9—18 μ. Mh. mixed with ch., alternate, ampulliform, 15—23×7—9 μ. Ms. scattered, straight, simple, acute, to 550×9—10 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 41—48×15—16 μ.

On *Plectronia umbellata*, Bombay, India, type in F.

Host Family 287. Musaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

31⅓1.4223	Cols. thin; hyphae substraight to sinuous; hc. oblong-clavate, entire; ms. acute or dentate .	*heliconiae*	(1664)
3123.4232	Cols. thin, velvety; hyphae substraight to crooked; hc. ovate-globose, entire; ms. obtuse, uncinate to loosely coiled	*musae*	(1665)
31½1.6322	Cols. dense; hyphae straight to undulate; hc. ellipsoid to sublobate; ms. acute, flexuous to subuncinate	*marcospora*	(1666)

(1664) *Meliola heliconiae* Stev., Ann. Mycol. 26: 210. 1928.

Cols. hypophyllous, to 120 mm. diam., thin. Hyphae substraight to undulate or sinuous, branching opposite, acute to wide, loosely reticulate-interwoven, cells mostly 15—25×6—7 μ, Ch. alternate or

to 2% opposite, sometimes loosely scattered, straight or bent, spreading or antrorse, 14—20 μ long; stc. cylindric to cuneate, 3—5 μ long; hc. oblong to clavulate, entire, often bent, 11—15×7—10 μ. Mh. mixed with ch., mostly alternate, ampulliform, 15—20×6—8 μ. Ms. scattered, straight or slightly curved, to 800×6—7 μ, gradually attenuate upwards, apex simple and acute, or irregularly dentate to 6 μ. P. scattered, slightly verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—45×14—16 μ.

On *Heliconia* sp., Panama, Stevens 20, type, 44, 633, 708.

(1665) *Meliola musae* (Kunze) Mont., Syll. Crypt., no. 905. 1856.
= *Myxothecium musae* Kunze in Weigelt's exs.
= *Meliola curviseta* Lev. in herb., ined.

Cols. hypophyllous, thin, more or less velvety, to 10 mm. diam., or sometimes larger and effuse. Hyphae substraight with crooked or meandering branches, cells mostly 25—40×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate. Ch. alternate or to 2—3% opposite, at wide angles, to 100 μ or more long, crooked; stc. cylindric, 0—3-septate, tortuous, 20—90 μ long; hc. ovate to subglobose, usually entire, sometimes elongate and sub-uncinate, 12—20×9—12 μ. Mh. not seen. Ms. numerous, closely scattered, simple, obtuse, 220—330×7—9 μ, widely arcuate to uncinate or loosely coiled above. P. scattered, verrucose, to 220 μ diam. Sp. oblong to narrowly subellipsoid, obtuse, 4-septate, slightly constricted, 43—47×13—15 μ.

On *Ravenala guyanensis*, Surinam, 1827, Weigelt's exs. (type); Brazil, Ule, Mycoth. brasil. 18, Ule, Herb. brasil. 3052 (S); Surinam, Kegel 599 (P); — On *Heliconia* sp., Panama, Stevens 1067, 20a, with ms. acute when fully mature and sp. up to 50×15 μ.

(1666) *Meliola macrospora* Baker & Dale, Mycol. Paper, IMI **33**: 17. 1951.

Cols. epiphyllous, dense, to 20 mm. diam. Hyphae straight to undulate, cells mostly 40—60×7—8 μ, branching opposite or irregular, acute, loosely interwoven-reticulate. Ch. alternate, verry arely opposite, straight or bent, to 40 μ long, spreading or subantrorse; stc. cylindric to cuneate, 10—20 μ long; hc. ellipsoid, or often 2—3-angulose to sublobate, 15—20×10—15 μ. Mh. few, mixed with ch., alternate, ampulliform, 30—40×8—10 μ, neck elongate. Ms. numerous, scattered, simple, acute, mostly curved in the middle, or sometimes subuncinate, to 500×10 μ. P. scattered, globose, nearly smooth, to 175 μ diam. sp. subellipsoid with obtuse to attenuate-rounded ends, 4-septate, slightly constricted, 62—72×18—23 μ.

On *Heliconia bihai*, Trinidad, Baker 1799, type; Venezuela Blakeslee in F, FLS; Grenada, Thaxter 7388 (F).

Synopsis of accepted species of *Meliolineae:*

Irenopsis

3301.4220 Cols. thin; hyphae substraight to undulate; hc. subglobose, entire; ps. uncinate, obtuse, to 100 μ ..... *chandleri* (1667)

Asteridiella

3101.4220 Cols. dense; hyphae substraight; hc. oblong-ovoid, entire..... *costi* (1668)

3101.3220 Cols. thin; hyphae substraight to undulate; hc. globose-ovoid, entire ..... *parasitica* (1669)

Meliola

3132.5223 Cols. .....; ms. (a) to 1000 μ, (b) to 180 μ, pluridentate to 12 μ..... *longistipitata* var. *minor* (1671)

3132.3224 Cols. dense; hyphae substraight; hc. subglobose, entire; ms. (a) to 1700 μ, dentate; (b) around P., to 400 μ, cristate ..... *longistipitata* (1670)

3132.3222 Cols. dense, velvety; hyphae straight to undulate; hc. globose; ms. —500 μ, variously dentate..... *longistipitata* var. *wakefieldii* (1672)

31⅓3.3221 Cols. dense; hyphae substraight; hc. globose-ovate, entire; ms. obtuse, subacute or 2—3-dentate..... *monopla* (1673)

(1667) *Irenopsis chandleri* Hansf., Proc. Linn. Soc. London **153**: 8. 1941.

Cols. epiphyllous, thin, to 4 mm. diam. ,on a dark brown spot larger than the colony. Hyphae substraight to undulate, cells 25—40× 6—8 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate, 20—27 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose, straight or bent, 12—17 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. P. scattered, verrucose, to 150 μ diam., on upper half with 6—12 ps.. uncinate, obtuse, sometimes torulose, to 100 μ long by 10 μ thick, doubtfully septate, smooth, wall 1—2 μ thick. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—43×12—15 μ.

On *Costus afer*, Uganda, Hansford 2378 (type), 2662, 3501; Gold Coast, Deighton CB 1006, 2396; — On *C. lucanusianus*, Sierra Leone, Deighton 2226, 2286, 1533.

(1668) **Asteridiella costi** (Stev.) Hansf., comb. n.

= *Irenina costi* Stev., Ann. Mycol. **25**: 458. 1927.

Cols. epiphyllous, to 12 mm. diam., dense. Hyphae substraight, branching opposite at wide angles, often rectangular, closely reticulate, cells mostly 20—30×6—7 μ. Ch. alternate, spreading, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 3—5 μ long;

hc. oblong to ovoid, entire, 12—16×8—10 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 18—25×7—8 μ. neck elongate. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 37—43×14—16 μ.

On *Costus* sp., Panama, Stevens 728-a, type.

(1669) *Asteridiella parasitica* (Stev.) Hansf., Sydowia **10**: 49. 1957.
= *Irenina parasitica* Stev., Ann. Mycol. **25**: 454. 1927.

Cols. epiphyllous, irregular, to 5 mm. diam., thin. Hyphae substraight to undulate, cells mostly 25—40×6—7 μ, branching opposite at wide angles, loosely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or slightly bent, 18—24 μ long; stc. cuneate to cylindric, 3—9 μ long; hc. globose to ovoid, entire, 14—18×10—16 μ. Mh. mixed with ch., few, alternate, conoid to ampulliform, 20—25×8—10 μ. P. loosely scattered, slightly verrucose, immature. Sp. oblong, obtuse, 4-septate, constricted, 35—39×14—15 μ (or ? 45—49×17—19 μ).

On *Costus* sp., Ecuador, Stevens 194, type (FLS).

All colonies seen by the present author were severely parasitised, and contained no mature perithecia; two different types of spores were present in his mounts, both described above, and either could belong to the colonies observed. No young colonies were found, showing their originating spores, to decide between the two types. This species must remain doubtful, pending further collections in better condition. It is possible that the leafspots due to the parasitic action of the colonies, may actually be the result of infection by the hyper-parasites present.

(1670) *Meliola longistipitata* Stev., Ann. Mycol. **26**: 191. 1928.

Cols. amphigenous, mostly hypophyllous, dense, to 40 mm. diam. Hyphae substraight, cells mostly 15—25×5 μ, branching opposite, closely reticulate. Ch. opposite, spreading, crooked, 14—24 μ long; stc. cylindric, sinuous to tortuous, 10—15 μ long; hc. subglobose, usually slightly irregular to rounded-angulose, 7—10×7—11 μ. Mh. mixed with ch., few, opposite or alternate, narrow ampulliform, to 25—6 μ, neck elongate. Ms. biform: scattered over mycelium, to 1800×7 μ, straight, simple or variously dentate, (b) grouped around P., to 400 μ long, the apex cristate-dentate, or with 2—3-dentate branches to 20 μ long. P. scattered, globose, slightly verrucose, to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40×13—14 μ.

On *Dimerocostus uniflorus*, Panama, Stevens 1186, type; — On *Costus sanguineus*, Costa Rica, Stevens 562; — On *C. spicatus*, Panama, Stevens 1292.

(1671) *Meliola longistipitata* Stev. var. *minor* Cif., Mycopathologia **7**: 150. 1954.

Differs from the type in shorter (a) setae, to 1000 μ long; (b)

setae shorter, to 180 μ long, pluridentate to 12 μ. Ch. with short stc., 3—5 μ long; sp. larger, 52—56×16—19 μ.

On *Costus cylindricus*, San Domingo, Ekman 3309, type (not seen by present author).

(1672) *Meliola longistipitata* Stev. var. *wakefieldii* Hansf., Sydowia 9: 19. 1955.

Cols. amphigenous, to 6 mm. diam., dense, velvety. Hyphae substraight to undualte, cells mostly 20—30×5—7 μ, branching opposite, acute or wide, closely reticulate. Ch. almost entirely opposite, preading, straight or slightly bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. globose to ovate, straight or bent, entire, 7—10×7—10 μ. Mh. few, mixed with ch., ampulliform, opposite or alternate, 12—15×6—8 μ. Ms. thinly scattered over mycelium and grouped around P., straight, to 500×7—9 μ, those around P. to 250 μ long; apex 3—5-dentate to 8 μ, or 2-furcate to 15 μ with branches dentate. P. scattered, globose. verrucose, to 140 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 28—34×9—11 μ.

On *Costus* sp., Trinidad, Wakefield 204, type (K); Honduras, Standley 55498 (F); — On *C. sanguineus*, Costa Rica, Stevens 562.

(1673) *Meliola monopla* Cif., Mycopathologia 7: 159. 1954.

Cols. mostly epiphyllous, dense, subradiate, to 3,5 mm. diam. Hyphae 6,5—8,5 μ wide, substraight to undulate, branching opposite at wide angles, closely reticulate. Ch. alternate or opposite, 17—23 μ long; straight or bent; stc. 3,5—7 μ long; hc. globose to ellipsoid, straight or bent, entire, 10—15 μ diam. or 12—17×11—15 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—18×5—7 μ. Ms. fairly numerous, to 300×6—10 μ, simple and obtuse to subacute, or frequently 2—3-dentate to 12 μ. P. scattered or subaggregate, smooth, to 225 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—40×13—15 μ.

On *Alpinia aromatica*, San Domingo, Ekman 4192, type. (not seen by present author).

Host Family 291. Cannaceae.

(1674) *Meliola velutina* Wint., Hedwigia 25: 97. 1886.

Cols. hypophyllous, to 15 mm. diam. or confluent, velvety, thin. Hyphae flexuous to torulose, loosely and remotely branched. Ms. very numerous, straight, simple, acute, 8—9,5 μ thick, slightly undulate-tuberculate towards apex. Ch. alternate, mostly bent; hc. irregular, variously crenate to lobate. P. scattered, verrucose, to 220 μ diam. Sp. cylindric to subellipsoid, obtuse, 42—44×9,5—12 μ.

On *Cannaceae* indet., San Thome, Moller.

This is known to the writer only from the original diagnosis, adapted above, and authentic material has not been traced.

Synopsis of accepted species of *Meliolineae:*

Meliola

3142.3221	Cols. subdense, velvety; hyphae straight; hc. oblong, entire; ms. shortly 3—4-dichotomous-cristate, tips acute	*calatheae*	(1675)
3143.3221	Cols. thin, velvety; hyphae undulate to sinuous; hc. ovate-clavate, entire; ms. 1—3-dichotomous, tips acute	*marantochloae*	(1676)
31¾1.3221	Cols. thin; hyphae undulate-sinuous; hc. ovate-cylindric, entire; ms. dentate-furcate, tips obtuse	*telensis*	(1677)
31⅓1.4222	Cols. subdense; hyphae substraight to sinuous; hc. ovate-clavate or angulose; ms. acute or 2—4-dentate	*hypselodelphidis*	(1678)
31⅓1.4222	Cols. thin, velvety; hyphae substraight; hc. ovate-clavate, entire; ms. obtuse or 2—3-dentate	*heterotricha*	(1679)
31⅓1.2221	Cols. thin; hyphae sinuous; hc. ovate to angulose; ms. obtuse, often contorted, or 2-dentate to 10 μ, tips obtuse	*marantacearum*	(1680)
3121.6222	Cols, dense; hyphae crooked; hc. globose-clavate or angulose; ms. arcuate to uncinate, subacute	*calatheicola*	(1681)
3111.6333	Cols. dense, velvety; hyphae substraight; hc. lobate; ms. obtuse, hispid along upper half	*hispida*	(1682)
3111.4222	Cols. thin to subdense, velvety; hyphae substraight to flexuous; hc. subglobose-ovate, entire; ms. acute	*leptospora*	(1683)
3111.3222	Cols. subdense; hyphae substraight; hc. subglobose-oblong, entire; ms. obtuse	*marantae*	(1684)

(1675) *Meliola calatheae* Stev., Ann. Mycol. 26: 178. 1928.

Cols. hypophyllous, subdense, thinly velvety, to 30 mm. diam. Hyphae straight, cells mostly 25—40×5—6 μ, branching opposite, acute, loosely interwoven-reticulate, becoming close in centre of older colonies. Ch. opposite, spreading, straight or bent, 12—15 μ long; stc. cylindric, 2—4 μ long; hc. oblong with rounded apex, often slightly bent, entire, 8—12 ×6—7 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 15—20×6—7 μ. Ms. scattered, straight, to 260×6—7 μ, apex more or less closely cristate with short (—15 μ) 3—4-dichotomous branches, tips acute. P. scattered, nearly smooth, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 38—45×14—15 μ.

On *Calathea insignis*, Costa Rica, Stevens 578, type (FLS, F); — On *Bihai pendula*, Costa Rica, Stevens 749, 766 (FLS, F).

(1676) *Meliola marantochloae* Hansf., Proc. Linn. Soc. London **157**: 178. 1946.

Cols. hypophyllous, rather thin, to 20 mm. diam. or confluent, velvety. Hyphae undulate to sinuous, cells 20—45×6—8 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate or less commonly opposite, at wide angles, usually straight, 14—18 μ long; stc. cylindric, 4—8 μ long; hc. ovate, subglobose or clavate, entire, straight or slightly bent, 9—13×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. numerous, scattered and grouped around P., straight, to 240×7—9 μ, apex 1—3-dichotomous, 1-ry br. to 35 μ, 2-ry to 20 μ, 3-ry to 10 μ, acute, wide spreading. P. scattered, verrucose, to 160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 34—38× 11—13 μ.

On *Marantochloa* sp., Uganda, Hansford 2826 (type), 2958; Sierra Leone, Deighton 5793-a; Congo Belge, Vanderyst 24303 (BRUX).

(1677) *Meliola telensis* Hansf., Sydowia 10: 93. 1957.

Cols. epiphyllous, thin, to 2 mm. diam., scattered or sometimes confluent. Hyphae undulate to sinuous, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, spreading or antrorse, straight or bent, 16—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. ovate to cylindric, entire, often bent, 12—15×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—21×7—9 μ. Ms. few, mostly around P., to 240× 8—9 μ, straight or slightly arcuate above, the apex irregularly dentate-furcate with obtuse teeth to 20 μ long. P. scattered, verrucose, to 180 μ long. Sp. oblong, obtuse, 4-septate, constricted, 35—40×13—14 μ.

On *Calathea* sp., Honduras, Standley 55790 p. p., type (F), mixed with *M. hispida*.

(1678) *Meliola hypselodelphidis* Hughes, Mycol. Paper, IMI **48**: 51. 1952.

Cols. epiphyllous, to 6 mm. diam., subdense. Hyphae substraight to flexuous or finely sinuous, cells mostly 25—35×6—8 μ, branching opposite at wide angles, loosely to closely interwoven-reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 15—24 μ long; stc. cylindric, 4—10 μ long; hc. ovate to cylindric or clavate, entire or rounded-angulose, straight or strongly bent, 11—15×8—12 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—23× 6—9 μ. Ms. scattered, straight, simple or 2—4-dentate to 13 μ, to 450×8—10 μ. P. loosely scattered, verrucose, to 160 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 40—45×15—17 μ.

On *Hypselodelphis* sp., Gold Coast, Hughes in IMI 44231-a, type.

(1679) *Meliola heterotricha* Syd., Leafl. Philipp. Bot. **6**: 1923. 1913.

Cols. hypophyllous, to 30 mm. diam., velvety, rather thin.

Hyphae substraight to undulate, cells mostly 25—40×6—7 μ, branching opposite, acute, loosely reticulate. Ch. alternate, straight or bent, at various angles, 16—23 μ long; stc. cylindric, 3—8 μ long; hc. ovate to cylindric-clavate, usually entire, straight or bent, 11—18×7—10 μ. Mh. few, mixed with ch., opposite or alternate, 18—30×6—9 μ, neck elongate. Ms. nummerous, scattered and grouped around P., straight, to 375×6—8 μ, simple and obtuse to subacute, or 2—3-dentate to 12 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 36—44×10—13 μ, often with one end wider than the other.

On *Donax cannaeformis*, Philippines, PBS 13541, type (S). PBS 32173 (F).

(1680) *Meliola marantaceaarum* Stev., Ann. Mycol. 26: 208. 1928.

Cols. hypophyllous, thin, to 50 mm. diam. Hyphae sinuous, cells mostly 20—40×4—6 μ, branching opposite at wide angles, loosely interwoven-reticulate. Ch. alternate or more scattered, spreading, straight or bent, 15—30 μ long; stc. cylindric to cuneate, 4—17 μ long; hc. ovate to angulose, often bent, 10—18×8—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×6—7 μ. Ms. scattered and grouped around P., straight, to 260×6—7 μ, apex simple and obtuse, or often twisted or contorted, sometimes with 2 obtuse branches to 10 μ long. P. scattered, verrucose, to 130 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 24—29×11—12 μ.

On *Calathea insignis*, Costa Rica, Stevens 693 (type), 569, 587 (FLS, F);

On *Calathea* sp., Honduras, Standley 55819 (F).

(1681) *Meliola calatheicola* Stev., Ann. Mycol. 26: 265. 1928.

Cols. to 8 mm. diam., dense, on petioles. Hyphae sinuous to crooked, cells mostly 20—40×7—10 μ, branching alternate or irregular, acute, closely reticulate. Ch. alternate, spreading, usually bent, 18—23 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose, ovate or clavate, entire or rounded-angulose, often bent, 12—19×12—16 μ. Mh. mixed with ch., opposite or alternate, few, ampulliform, 18—25×7—9 μ. Ms. numerous, scattered, to 320×9—10 μ, strongly bent, arcuate or sub-uncinate above, apex subacute. P. scattered, nearly smooth, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 52—61×14—15 μ.

On *Calathea lutea*, Costa Rica, Stevens 822, type (FLS, F).

(1682) *Meliola hispida* Stev., Ann. Mycol. 26: 241. 1928.

Cols. epiphyllous, dense, velvety, subcrustose, to 3 mm. diam. Hyphae substraight to undulate, branching opposite, acute, closely reticulate, cells mostly 25—35×9—10 μ. Ch. alternate, subantrorse, straight or bent, 25—37 μ long; stc. cylindric to cuneate, 6—15 μ long; versiform, irregularly and often deeply lobate, straight or bent, 16—23×15—20 μ. Mh. separate, opposite or alternate, ampulliform,

16—22×8—9 μ. Ms. numerous, scattered, straight, rigid, to 850× 11—12 μ, simple, obtuse, the upper half hispid with numerous denticles about 1 μ high. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 54—61×18—23 μ.

On *Calathea macrosepala*, Costa Rica, Stevens 797 (type), 569 p. p.; — On *C.* sp., Honduras, Standley 55790 p. p. (F).

(1683) *Meliola leptospora* Gaill., Le Genre Meliola, 1892, p. 87.

Cols. mostly hypophyllous, to 15 mm. diam. or confluent, thin to subdense, velvety. Hyphae substraight to flexuous, cells mostly 25—40×5—8 μ, branching opposite or irregular, acute, loosely to closely interwoven-reticulate. Ch. alternate or more scattered, straight or irregularly bent, spreading or antrorse, 17—22 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. subglobose to ovate, entire, often bent, 10—13×8—13 μ. Mh. few, mixed with ch., alternate, ampulliform, 16—20×6—7 μ. Ms. numerous, closely scattered, more or less straight, simple, acute, to 450×8—9 μ, gradually attenuate to apex. P. scattered, verrucose, to 160 μ diam. Sp. oblong to narrow ellipsoid, obtuse, 4-septate, slightly constricted, 39—48×11—13 μ.

On *Marantaceae* indet., Congo, Thollon 1207, type (P).

(1684) *Meliola marantae* Stev., Ann. Mycol. Berlin **26**: 250. 1928.

Cols. amphigenous, mostly epiphyllous, to 4 mm. diam., subdense. Hyphae slightly undulate, cells mostly 20—30×6—9 μ, branching opposite, acute, closely reticulate. Ch. alternate, more or less antrorse, usually straight, 17—25 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. subglobose or oblong, entire, 12—18×10—14 μ. Mh. usually separate, alternate or opposite, ampulliform, 15—18×6—8 μ. Ms. few, thinly scattered, more or less straight, simple, obtuse, to 320×7—8 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 31—36×15—16 μ.

On *Maranta arundinacea*, British Guiana, Stevens 202, type; Trinidad, Thaxter 7502 p. p. (F); Venezuela, Muller 2014 (CUP; — On *Marantaceae* indet., British Guiana, Stevens 190, 465. — On *Maranta* sp., Trinidad, Thaxter 7484 (F).

Host Family 293. Liliaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3113.5332	Cols. dense, crustose, velvety; hyphae substraight; hc. globose-ovate, entire; ms. acute	*lomandrae*	(1685)
3113.5332	Cols. dense, velvety; hyphae substraight to undulate; hc. oblong-piriform, entire; ms. acute or subacute	*ripogoni*	(1686)
3111.4223	Cols. thin to dense; hyphae substraight to undulate; hc. angulose to sublobate; ms. acute	*gregoriana*	(1687)

(1685) *Meliola lomandrae* Hansf., Proc. Linn. Soc. N.S.W. **78**: 81. 1953.

Cols. amphigenous, very dense, velvety, crustose, to 3 mm. diam. Hyphae substraight, cells mostly 15—30×7—9 μ, branching usually opposite, at varied angles, densely reticulate and almost solid. Ch. opposite or alternate, antrorse, substraight, 15—23 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. subglobose to wide ovate, entire, 10—15×9—13 μ. Mh. not seen. Ms. very numerous, scattered, straight, simple, acute, to 340×8—9 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—53× 18—21 μ.

On *Lomandra* sp., Queensland, Tryon 501, (type), Bailey 634; — On *L. montana*, New South Wales, Fraser 220.

(1686) *Meliola ripogoni* Hansf., Proc. Linn. Soc. N.S.W., **78**: 79. 1953.

Cols. amphigenous, to 3 mm. diam., very dense and velvety. Hyphae substraight to undulate, branching opposite, acute, densely reticulate and nearly solid, cells mostly 20—25×8—10 μ. Ch. alternate or opposite in varying proportions, antrorse, straight or slightly bent, 20—28 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. oblong to piriform, entire, straight or slightly bent, 15—22×10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—22×8—9 μ. Ms. numerous, closely scattered, straight, simple, acute or subacute, to 330×10 μ. P. subaggregate in centre of colony, verrucose, to subellipsoid, obtuse, 4-septate, constricted, 50—58×19—22×15—16 μ.

On *Enargea parviflora*, New Zealand, Dingley 16075.

For description of this species on *Ripogonum*, see below under *Smilacaceae*.

(1687) *Meliola gregoriana* Stev., Bull. Bishop Mus. **19**: 39. 1925.

Cols. amphigenous, 2—5 mm. diam., thin to dense. Hyphae substraight to undulate, branching alternate, acute, loosely to very densely reticulate and becoming subsolid, cells mostly 15—20×6—7 densely reticulate and becoming subsolid, cells mostly 15—20×6—7 μ. Ch. alternate, subantrorse, straight or irregularly bent, 22—35 μ long; stc. cuneate to cylindric, 8—15 μ long; hc. irregularly rounded-angulose to sublobate, versiform, 13—22×10—18 μ. Mh. few, mixed with ch., alternate, ampulliform, 15—19×7—9 μ. Ms. scattered, straight, simple, acute, to 660×12—13 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—47× 15—17 μ.

On *Dianella* sp., Hawaii, Stevens 2306, type (FLS).

In the type collection this occurs mixed on the same leaves with what appears to be a species of *Asteridiella*, immature, with no perithecia or setae, but developing from spores 54×17 μ, and having

rather larger, but similarly irregular ch.; the mh. occur on separate hyphae.

Host Family 297. Smilacaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

31⅓3.5222	Cols. subdense, velvety; hyphae substraight; hc. subglobose-oblong, entire; ms. acute or 2—4-dentate to 12 μ	*smilacis*	(1688)
3113.5331	Cols. dense, velvety; hyphae substraight; hc. subglobose-oblong, entire; ms. obtuse to acute	*ripogoni*	(1689)
3113.5233	Cols. dense; hyphae substraight; hc. oblong-subglobose, entire; ms. acute	*cymbisperma*	(1690)
3111.5233	Cols. dense, velvety;	*gregoriana* var. *confusa*	(1691)
3111.4321	Cols. dense, subvelvety; hyphae undulate; hc. subglobose or angulose; mh. septre; ms. acute	*salleana*	(1691a)

(1688) *Meliola smilacis* Stev., Illinois Biol. Monogr. 2: 56. 1916.

Cols. amphigenous, to 4 mm. diam., subdense, velvety, Hyphae substraight to slightly undulate, cells mostly 20—30×6—8 μ, branching opposite at varying angles, loosely to closely interwoven-reticulate. Ch. alternate or less frequently opposite, spreading or antrorse, straight or slightly bent, 15—20 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. subglobose to oblong, entire, 11—15½10—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—23× 8—10 μ. Ms. numerous, closely scattered, straight, simple and acute when fully mature, or bifid to 15 μ, sometimes 2—4-dentate to 12 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 46—54×17—20 μ.

On *Smilax coriacea*, Porto Rico, Stevens 5261 (type); — On *S. mollis*, Honduras, Standley 53088 (F), with setae to 1000 μ long; — On *S.* sp., Porto Rico, Stevens 8429. — On *S. lanceofolia*, Formosa, Yamamoto (USDA).

(1689) *Meliola ripogoni* Hansf., Proc. Linn. Soc. N.S.W. 78: 79. 1953.

Cols. mostly epiphyllous, to 5 mm. diam., dense, velvety. Hyphae substraight, cells mostly 20—25×7—9 μ, branching opposite, acute, densely radiating-reticulate. Ch. opposite or less frequently alternate, more or less antrorse, usually straight, 16—25 μ long; stc. cylindric to cuneate, 3—8 μ long; hc. subglobose to oblong, entire, 12—18×8—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—21×8—9 μ. Ms. numerous, closely scattered, straight, simple, obtuse to acute, to 300×8—10 μ. P. scattered, verrucose, to 220 μ

diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—56×18—22 μ.

On *Ripogonum album*, New South Wales, Fraser 64, type, 122; — On *Smilax jalopensis*, Honduras, A. S. Miuller (USDA).

(1690) *Meliola cymbisperma* Mont., Ann. Sci. Nat., Bot. Ser. ii, **20**: 374. 1843.

Cols. epiphyllous, to 5 mm. diam. or confluent, ednse. Hyphae substraight, cells mostly 18—25×7—10 μ, branching opposite at wide angles, loosely to closely reticulate. Ch. alternate or opposite in varying proportions, spreading or antrorse, straight or bent, 18—24 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. subglobose to oblong, 13—18×9—12 μ. Mh. not seen. Ms. few, straight, simple, acute, to 650×10 . P. scattered, verrucose, to 240 μ diam. Sp. oblong. obtuse, 4-septate, constricted, 50—56μ19—20 μ.

On *Smilax globifera*, Surinam, Splitgerber 1262, type (P).

(1691) *Meliola gregoriana* Stev. var. *confusa* Cif., Mycopathologia **7**: 133. 1954.

Differs from type: Hyphae densely intricate-ramose, rather indistinctly reticulate; cols. black, velvety, amphigenous, on upper surface to 7 mm diam.; P. 220—260 μ diam.; sp. 46—52×17—20 μ.

On *Smilax populnea*, San Domingo, Ekman 2792, type (not seen by present author).

(1691-a) *Meliola salleana* Hansf., spec. n.

Cols. epiphyllous, dense, subvelvety, to 3 mm. diam. Hyphae more or less undulate, branching opposite or alternate, acute, densely reticulate, becoming nearly solid, cells mostly 18—26×7,5—9. μ Ch. alternate only, subantrorse, straight or slightly bent, 18—28 μ long; stc. cuneate, 4—8 μ long; hc. subglobose, entire or irregularly rounded-angulose, rarely sublobate, 15—22×14—19 μ. Mh. few, separate in centre of colony, opposite or alternate, ampulliform, 15—19×7—8 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute, to 300×9—10 μ. P. in central group, verrucose, to 180 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—45×17—21×15 μ.

On *Smilax* sp., San Domingo, Sallé (Herb. Patouillard in F, type).

Host Family 301. Philesiaceae.

(1692) *Meliola behniae* Syd., Bothalia **2**: 444. 1928.

Cols. amphigenous, to 5 mm. diam., easily secedent, dense, velvety. Hyphae substraight, cells mostly 17—20×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate or rarely opposite, spreading or subantrorse, usually straight, 17—25 μ long; stc. cuneate to cylindric, 5—8 μ long; hc. subglobose, entire, 10—17×

10—15 μ. Mh. numerous, mixed with ch., alternate or opposite, ampulliform, 16—20×6—7 μ. Ms. very numerous, scattered, straight, to 350×10—12 μ, apex with 2—3 branches to 16 μ, each 2—3-dentate to 10 μ. Sp. oblong to subellipsoid, obtuse. 4-septate, constricted, 43—50×17—20 μ.

On *Behnia reticulata*, South Africa, PRET 1779, 11848, 14955, 17767.

Host Family 302. Araceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4220	Cols. subdense; hyphae substraight to sinuous; hc. subglobose;	*pothodis*	(1693)

Meliola

3143.5221	Cols. dense, velvety; hyphae substraight; hc. subglobose to ovate, entire; ms. 2—3-dichotomous	*philodendri*	(1694)
31¾3.4222	Cols. dense; hyphae substraight to undulate; hc. globose-ovate, entire; ms. cristate	*dieffenbachiae*	(1695)
3123.4221	Cols. dense, velvety; hyphae substraight; hc. subglobose-ovate, entire; ms. arcuate to hamate, obtuse to subacute	*philodendricola*	(1696)
3111.3222	Cols. thin, subvelvety; hyphae sinuous to tortuous; hc. globose-piriform, entire; ms. straight, obtuse, torulose above	*alocasiae*	(1697)

(1692) *Asteridiella pothodis* (Hansf. & Thirum.) Hansf., Sydowia 10: 49. 1957.

= *Irenina pothodis* Hansf. & Thirum., Farlowia **3**: 288. 1948.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., smooth, subdense. Hyphae substraight to crooked, cells mostly 25—30×8—9 μ, branching opposite, wide, closely reticulate. Ch. alternate, more or less antrorse, straight or bent. 15—25 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. globose, ovate or clavate, rarely rounded-angulose, straight or bent, 10—14×10—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 13—20×8—10 μ. P. closely scattered, to 190 μ diam., surface cells obtusely conoid, scarcely projecting. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted 38—46×15—18 μ.

On *Pothos scandens*, India, Thirumalachar 879, type.

(1694) *Meliola philodendri* Stev., Illin. Biol. Monogr. 2: 60. 1916.

Cols. mostly epiphyllous, to 5 mm. diam., velvety. dense. Hyphae straight, cells mostly 15—20×7—8 μ, branching opposite, acute to wide, closely reticulate. Ch. opposite or to about 15% alternate, antrorse, usually straight, 13—19 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. ovoid to subglobose, entire, 9—14×8—12 μ. Mh.

few, mixed with ch.. alternate or opposite, ampulliform. Ms. scattered, straight, to 300×9 μ, apex 2—3-dichotomous, the branches widely spreading-reflexed, 1-ry to 30 μ, 2-ry to 30 μ. 3-ry to 20 μ, 2-dentate. P. scattered, verrucose, to 170 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate. constricted, 46—54×15—20 μ.

On *Philodendron krebsii*, Porto Rico, Stevens 7225, (type), 4346, 8994. 377, 8712, 8424, 437 (FLS). — On *P. angustatus*, San Domingo, Ciferri, Mycofl. doming. exs. 65, Ciferri 2911 (S).

(1695) *Meliola dieffenbachiae* Stev., Illinois Biol. Monogr. 2: 62. 1916.

= *Irenina aracearum* Stev., Ann. Mycol. 25: 458. 1927.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., dense, velvety. Hyphae substraight to undulate, cells mostly 20—30×6—7 μ, branching opposite at wide angles, closely reticulate. Ch. opposite or alternate in varying proportions, somewhat antrorse, straight or bent, 12—18 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. oblong to globose, entire, 10—14×9—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. straight, to 450×8—10 μ, apex with 2—4 branches to 15 μ, these closely dentate, the whole forming a more or less dense crest; setae scattered. P. in central group, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 37—45×14—15 μ.

On *Dieffenbachia sequinae*, Porto Rico, Stevens 8148 (type), 8210, 8077, 8851, 5666, 7420, 8074, 3889, 8148, 7707, 7155, 312, Fink 878 (F), Whetzel 2565, 2566, 585, 586, Seaver 484 (CUP; British Guiana, Stevens 630, 536 (FLS, CUP); Trinidad, Stevens 959; Porto Rico, Kevorkian 145 (F); — On *D. longispatha*, Panama, Stevens 1021 (type of *I. aracearum*); — On *Montrichardia arborescens*, British Guiana, Stevens 114; — On *Anthurium* sp., Trinidad, Thaxter 7472 (F), with setae to 800 μ; — On *Philodendron krebsii*, Porto Rico, Kevorkian 66:c (F); — On *P. hymenocallis*, Trinidad, Thaxter 7477. (F).

(1696) *Meliola philodendricola* Hansf., Sydowia 9: 21. 1955.

Cols. amphigenous, to 3 mm. diam., subdense, velvety. Hyphae substraight, cells mostly 20—30×5—6 μ, branching opposite, acute, loosely to closely radiating-reticulate. Ch. alternate or opposite, spreading, usually straight, 14—20 μ long; stc. cylindric to cuneate, 2—6 μ long; hc. subglobose to ovate, entire, 11—15×9—12 μ. Mh. few, mixed with ch., ampulliform to conoid. 13—25×8—10 μ. Ms. numerous, scattered and grouped around P., widely arcuate to hamate, simple, obtuse to subacute, to 290×7—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric, obtuse, 4-septate. constricted, 37—45×14—16 μ.

On *Philodendron* sp., Brazil, Ule, Herb. brasil. 1753 (type); — On *Araceae* indet., Brazil, *Ule* 885 (F).

(1697) *Meliola alocasiae* Syd., Leafl. Philipp. Bot. **9**: 3114. 1925.

Cols. amphigenous, to 5 mm. diam. or confluent, rather thin, slightly velvety. Hyphae sinuous to tortuous, cells mostly 20—30× 5—7 μ, branching irregular or opposite at varying angles, loosely reticulate. Ch. alternate, more or less antrorse, usually straight, 13—22 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. globose, ovate or piriform, entire, 9—16×8—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—25×7—9 μ. Ms. few to numerous, scattered, more or less straight, simple, obtuse, to 350×8—9 μ, the upper part nodulose or torulose. P. scattered, verrucose, to 140 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 28—37× 13—14×11—13 μ.

On *Alocasia* sp., Philippines, Elmer 16333, type; Java, BO 4926.

Host Family 310. Roxburghiaceae.

(1698) *Meliola stemonae* Syd., Philipp. Journ. Sci. **21**: 134. 1922.

Cols. epiphyllous, to 3 mm. diam., subdense. Hyphae substraight, cells mostly 25—35×8—9 μ, branching opposite, acute, closely reticulate. Ch. alternate, 17—22 μ long, straight or bent, spreading; hc. subglobose to bent ovate, entire, 12—18×11—17 μ; stc. cylindric, 3—7 μ long. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, 20—29×7—10 μ. Ms. closely scattered, straight, to 800×11—13 μ, apex 1—3-dentate to 20 μ. P. scattered, verrucose, to 220 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 49—55× 21—25 μ.

On *Stemona tuberosa*, Amboina, Robinson 2230, type.

The IMI portion of the type collection shows only immature setae, to 700 μ long, simple, obtuse, paler at apex.

Host Family 311. Dioscoreaceae.

Synopsis of accepted species of *Meliolineae:*

Amazonia

3101.4240	Cols. dense, subcrustose; hyphae substraight to undulate; hc. subglobose-ovate, entire ...	*dioscoreae*	(1699)

Meliola

3143.4231	Cols. dense, crustose, velvety; hyphae straight; hc. subglobose, entire; ms. 2—3-furcate to 60 μ, br. 2-furcate —60 μ, obtuse	*dioscoreae*	(1700)
3133.4222	Cols. dense; hyphae substraight to undulate; hc. subglobose-clavate, entire; ms. 2—4-dentate to 10 μ	*dioscoreicola*	(1701)
31⅓3.4231	Cols. dense, velvety; haphye substraight; hc. subglobose, entire; ms. obtuse, subacute or variously dentate to 15 μ	*dioscoreicola* var. *peruviensis*	(1702)

(1699) *Amazonia dioscoreae* Hansf. & Stev., Journ. Linn. Soc. London, **51**: 265. 1937.

Cols. amphigenous, to 3 mm. diam., dense, smooth. Hyphae substraight to flexuous, cells mostly 12—18×6—8 μ, branching usually alternate, acute, forming almost a solid plate. Ch. alternate, antrorse, straight or bent, 15—19 μ long; stc. cuneate, 3—7 μ long; hc. subglobose to ovoid, usually entire, 9—13×6—13 μ. Mh. few, mixed with ch., ampulliform, opposite or alternate, 12—18×6—9 μ. P. flattened-globose, beneath a radiate mycelial covering, fimbriate at margin, 250—350 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—44×14—18 μ.

On *Dioscorea* sp., Uganda, Hansford 1346 (type), 1372.

(1700) *Meliola dioscoreae* Hansf. & Deight., Mycol. Paper, IMI **23**: 71. 1948.

Cols. epiphyllous, dense, crustose, velvety, easily secedent, to 3 mm. diam. Hyphae straight, cells mostly 10—20×8—9 μ, branching opposite, dense, at wide angles, forming almost a solid plate. Ch. opposite or 10—20% alternate, 13—17 μ long, slightly antrorse, usually straight; stc. 3—8 μ long, cylindric to cuneate; hc. subglobose, entire, 10—12×10—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 18—22×9—10 μ. Ms. numerous, closely scattered, straight, about 160 μ high, 3—3-furcate to 60 μ, 1-ry br. bi-furcate to 60 μ, apices obtuse to subacute. P. closely scattered, verrucose, to 220 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 42—50×16—18,8 μ.

On *Dioscorea* sp., Sierra Leone, Deighton 1986, type.

(1701) *Meliola dioscoreicola* Hansf. & Deight., Mycol. Paper, IMI **23**: 71. 1948.

Cols. epiphyllous, black, dense, to 3 mm. diam., velvety. Hyphae substraight to undulate, cells mostly 15—20×7—8 μ, branching opposite at wide angles, densely reticulate and almost solid in centre. Ch. alternate or 2—5 %opposite, 14—20 μ long, antrorse or spreading; stc. cylindric to cuneate, 3—7 μ long; hc. clavate to subglobose, entire, 10—14×9—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, mostly straight, 15—21×7—8 μ. Ms. numerous, straight, to 410×9—10 μ, apex 2—4-dentate to 10 μ, rarely simple and acute. P. in central group, verrucose, to 140 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 37—42×15—16 μ.

On *Dioscorea* sp., Sierra Leone, Deighton 1986 p. p., type.

(1702) *Meliola dioscoreicola* Hansf. & Deight., var. *peruviensis* Hansf., Sydowia **9**: 41. 1955.

Cols. epiphyllous, dense, to 3 mm. diam., velvety. Hyphae substraight, cells mostly 15—35×7—8 μ, branching opposite at acute to wide angles, becoming closely reticulate. Ch. alternate or to 30% opposite, straight or bent, 12—19 μ long; stc. cylindric, 2—5 μ long;

hc. globose, entire, often sharply bent, 9—13×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 20—28×8—9 μ, neck elongate. Ms. numerous, scattered and grouped around P., more or less straight, to 360×8—10 μ, simple and obtuse to subacute, or variously dentate to 15 μ. P. scattered, globose, verrucose, to 240 μ. diam. Sp. oblong, obtuse, 4-septate, constricted, 43—49×16—18 μ.

On *Dioscorea* sp., Peru, Ule, Herb. brasil. 3306, type (K).

Host Family 313. Agavaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3143.5231	Cols. dense, subcrustose, velvety; hyphae substraight to sinuous; hc. subglobose, entire; ms. 2—3-furcate and br. 2—3-dichotomous, acute	*dracaenicola*	(1703)
3141.5232	Cols. dense, velvety; hyphae straight; hc. globose, entire; ms. 3—4-dichotomous with longer branches, acute	*dracaenicola* var. *major*	(1704)
3141.4221	Cols. dense, velvety; hyphae straight; hc. globose; ms. 2—3-furcate, br. 2—3-dentate, acute	*sansevieriae*	(1705)
3133.5332	Cols. thin to dense, subvelvety; hyphae straight; hc. subglobose, entire; ms. cristate-dentate to 10 μ	*interrupta*	(1706)
3131.5333	Cols. dense, velvety; hyphae undulate to flexuous; hc. globose-ovate, entire; ms. dentate-furcate to 20 μ	*subdentata* var. *microspora*	(1707)
31⅓1.5334	Cols. dense, velvety; hyphae undulate; hc. large, subglobose; ms. obtuse to acute or dentate to 15 μ	*subdentata*	(1708)
3123.6331	Cols. dense, velvety; hyphae substraight; hc. subglobose to ovate-clavate, entire; ms. hamate to uncinate, obtuse	*dracaenae*	(1709)

(1703) *Meliola dracaenicola* Pat. & Har., Bull. Soc. Myc. France, 24: 14. 1908.

(3143.5231)

Cols. amphigenous, dense, subcrustose, velvety, to 5 mm. diam. Hyphae substraight to somewhat sinuous, cells mostly 15—25×7—9 μ, branching opposite at wide angles, densely reticulate-interwoven. Ch. alternate or about 5% opposite, more or less antrorse, usually straight, 17—20 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose, entire, 11—15×10—13 μ. Mh. mixed with ch., few to numerous, alternate or opposite, ampulliform, 18—24×7—11 μ. Ms. numerous, scattered, straight, 150—220×10—13 μ, 2—3-furcate above to 30 μ, branches reflexed-spreading and 2—3-dichotomous, final

branchlets 2-dentate, acute. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, 46—50×15—18 μ.

On *Dracaena* sp., Brazzaville, Congo Francaise, Chevalier 11312, type (P); — On *D. afromontana*, Congo Belge, Hendrickx 2090, 2519; — On *D. laxissima*, Uganda, Hansford 3358; — On *D. ugandensis*, Uganda, Hansford 794, 1981, 1758.

(1704) *Meliola dracaenicola* Pat. & Har. var. *major* Hansf., Journ. Linn. Soc. London **51**: 540. 1938.

Cols. very numerous, not often confluent, dense, amphigenous, velvety, to 5 mm. diam. Hyphae straight, cells mostly 20—35×7—9 μ, branching opposite, acute, densely reticulate. Ch. alternate only, 20—25 μ long; straight or slightly bent, antrorse; stc. cylindric to cuneate, 5—9 μ long; hc. globose, entire, 12—16 μ diam. Mh. mixed with ch., opposite or alternate, ampulliform, sometimes numerous in centre. Ms. loosely scattered, straight, to 340 ×10—11μ, repeatedly dichotomous, or sometimes with 3 primary branches, widely divergent, straight, 1-ry to 130 μ, 2-ry to 45 μ, 3-ry to 35 μ, ultimate to 10 μ, acute. P. scattered, verrucose, to 230 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—51×15—19 μ.

On *Dracaena fragrans*, Uganda, Hansford 2046, type.

(1705) *Meliola sansevieriae* Wakef., Journ. Linn. Soc. London **51**: 281. 1937.

Cols. amphigenous, dense, velvety, to 8 mm. diam. Hyphae straight, cells mostly 25—40×8—10 μ, branching opposite, acute, densely reticulate. Ch. alternate or very rarely opposite, 20—28 μ long; usually straight, antrorse or spreading; stc. cylindric, 4—8 μ long; hc. globose or subglobose, entire, 16—19×14—16 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. straight, to 280× 10—12 μ, apex 2—3-furcate to 30 μ, branches reflexed, often bent, with 2 short branches or merely 2—3-dentate to 10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—49×15—20 μ.

On *Sansevieria dawei*, Uganda, Small 577 (type), Hansford 1242, 2043.

In spite of the common occurrence and wide distribution of *Sansevieria* spp. in Uganda, this *Meliola* is rare.

(1706) *Meliola interrupta* Hansf. & Deight., Mycol. Paper, IMI, 23: 71. 1948.

Cols. amphigenous, thin to dense, often velvety, to 8 mm. diam., loosely scattered. Hyphae straight, cells mostly 20—30×9—10 μ, branching opposite, acute, closely reticulate and sometimes parallel. Ch. alternate, rarely opposite, towards edges of colonies often in groups of 3—5, with gaps between, antrorse, usually straight, 16—24 μ long; stc. cylindric, 4—9 μ long; hc. widely clavate to subglobose, entire, 12—17×10—15 μ. Mh. few to nummerous, opposite or alternate,

mixed with ch., conoid to ampulliform, 20—25×9—11 μ. Ms. scattered, few to numerous, straight, to 500×9—10 μ, apex variously dentate to 10 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—51×18—21 μ.

On *Dracaena mannii*, Gold Coast, Deighton CB 936, type.

(1707) *Meliola subdentata* Pat. var. *microspora* Hansf. & Deight., Mycol. Paper, IMI. **23**: 72. 1948.

Cols. amphigenous, scattered. dense, velvety, to 10 mm. diam. Hyphae sinuous to undulate, cells mostly 25—35×7—9 μ, branching opposite or irregular, acute, densely reticulate. Ch. alternate or more scattered, 17—25 μ long, more or less antrorse, straight or bent; stc. cylindric to cuneate, 5—10 μ long; hc. widely clavate to globose, 12—15×11—16 μ, entire. Mh. few, mixed with ch., opposite or alternate, ampulliform, to 30×10—12 μ, neck elongate. Ms. numerous, straight, 400—900×9—11 μ, apex dentate to 8 μ, or with 2 short, dentate, divergent branches to 20 μ long. P. scattered, verrucose. to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 47—51×18—21 μ.

On *Sansevieria liberica*, Gold Coast, Deighton CB 922, type. — On *S.* sp., Congo, Dybowski (Herb. Patouillard in F).

(1708) *Meliola subdentata* Pat., Journ. de Bot., 1897, p. 347.

Cols. amphigenous. numerous and small on upper surface, to 3 mm. diam. below. dense, velvety, adherent. Hyphae straight to undulate, branching opposite or irregular, acute to wide, densely reticulate and becoming almost solid, cells mostly 10—18×7—10 μ. Ch. alternate, or on upper surface to 2% opposite, antrorse or spreading, straight or slightly bent, 13—21 μ long; stc. cuneate to cylindric, 3—7 μ long; hc. subglobose to wide ovate, on upper surface entire, often rounded-angulose below, 10—17×10—14 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 17—20 ×7—9μ. Ms. numerous, closely scattered, straight, or slightly bent, to 490×10—12 μ, simple and acute, or rarely 2-dentate to 4—5 μ. P. closely scattered, verrucose, to 250 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 47—55×19—23×15—17 μ.

On *Dracaena* sp., Tonkin, Bon 4927, type (Herb. Patouillard in F). — On *D. aurea*, Hawaii, Forbes in Stevens 1393 (FLS); — On *D. multiflora*, Philippines, PBS 11221 (FLS) differs in having most setae dentate to 15 μ, or shortly bifurcate with 2-dentate branches.

The specimens Hendrickx 737, 740 on *Sansevieria* sp., Congo Belge, differ in much longer setae, to 1100×10—11 μ and in rather larger spores, 51—59×19—22 μ; further collections of this form may necessitate the erection of a distinct variety.

(1709) *Meliola dracaenae* Stev., Bull. Bishop Mus. **19**: 40. 1925.

Cols. amphigenous, dense, to 3 mm. diam., velvety. Hyphae substraight to undulate, cells mostly 20—25×7—8 μ, branching

alternate or opposite, acute, forming an almost solid plate of radiating-reticulate hyphae. Ch. alternate or to 30% opposite, more or less closely antrorse-bent, 18—23 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. subglobose, ovate to widely clavate, entire, 10—18×10—13 μ. Mh. not seen. Ms. numerous, scattered, to 300×9—10 μ, simple, obtuse, widely hamate to uncinate above, rarely with 2 obtuse teeth to 8 μ long. P. scattered, verrucose, to 220 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 54—61×20—24 μ.

On *Dracaena aurea*, Hawaii, Stevens 419, type.

Host Family 314. Palmae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.4230	Cols. dense, subcrustose; hyphae substraight to undulate; hc. ovate-oblong, entire	*iquitosensis*	(1710)
3101.4220	Cols. dense, crustose; hyphae undulate to sinuous; hc. angulose to sublobate	*manaosensis*	(1711)

Meliola

3141.5331	Cols. dense, velvety; hyphae straight to undulate; hc. piriform or angulose; ms. shortly furcate and cristate-dentate	*decora*	(1712)
3141.5331	Cols. dense, velvety; hyphae straight; hc. irregular; ms. with 2—4 long acute br.	*elaeis*	(1713)
3141.4221	Cols. thin; hyphae substraight; hc. ovate entire; ms. 2—3-dichotomous	*morrowi*	(1714)
3141.4221	Cols. thin, subvelvety; hyphae substraight to undulate; hc. ovate-clavate; ms. 1—3-dichotomous, br. longer	*acristae*	(1715)
31¾1.4332	Cols. thin to subdense, subvelvety; hyphae substraight; hc. ovate-oblong; ms. 2-furcate or irregularly 2—4-dentate to 30 μ	*acristae* var. *cocoes*	(1716)
31¾1.42×1	Cols. thin to subdense; hyphae substraight to crooked; hc. piriform to sublobate; ms. cristate-dentate to 20 μ	*acristae* var. *coccothrinacis*	(1717)
3141.4221	Cols. thin; hyphae undulate-flexuous; hc. ovate or subangulose; ms. 3—4-dichotomous, br. short	*melanococcae*	(1718)
31⅓1.6332	Cols. dense, velvety; hyphae substraight to undulate; hc. angulose to sublobate; ms. acute or 2—3-dentate to 20 μ	*palmicola*	(1719)
3131.5333	Cols. subdense, velvety; hyphae substraight; hc. subglobose-ovate or rarely angulose; ms. 1—4-dentate to 20 μ	*palmicola* var. *africana*	(1720)
3131.4222	Cols. dense, velvety; hyphae substraight; hc. subglobose-oblong to subglobate; ms. 2—4-dentate to 25 μ	*palmicola* var. *copernicinae*	(1721)

3131.5332	Cols. thin, velvety; hyphae substraight; hc. irregularly lobate; ms. shortly furcate-dentate	*livistoniae*	(1722)
31⅓1.4332	Cols. thin; hyphae substraight; hc. angulose to sublobate; ms. obtuse or 2-dentate, scabrid above	*regiae*	(1723)
31⅓1.4222	Cols. thin; hyphae substraight; hc. stellate-lobate; ms. acute or 2-dentate	*amadelpha*	(1724)
3121.4221	Cols. thin; hyphae substraight to flexuous; hc. sinuous-lobate; ms. widely uncinate, obtuse to subacute	*mauritiae*	(1725)
3121.4221	Cols. thin; hyphae substraight to sinuous; hc. sinuous to lobate; ms. arcuate to uncinate, obtuse	*mauritiae* var. *raphiae*	(1726)
3121.4221	Cols. thin to subdense, subvelvety; hyphae substraight; hc. sinuous-lobate; ms. uncinate to loosely coiled above, obtuse to subacute	*mauritiae* var. *ancistrophylli*	(1727)
3121.4221	Cols. cense, crustose; hyphae straight; hc. ovate-oblong, entire; ms. obtuse, bent to loosely coiled	*calami*	(1728)
3111.6332	Cols. thin to subdense, subvelvety; hyphae substraight; hc. angulose to lobate; ms. acute	*sparsipoda*	(1729)
3111.4321	Cols. dense, subvelvety; hyphae sinuous; hc. ovoid-oblong, crenulate; ms. obtuse	*bactridis*	(1730)
3111.5331	Cols. dense; hyphae substraight to ungulate; hc. subglobose to sublobate; ms. obtuse	*hyalospora*	(1731)

(1710) *Asteridiella iquitosensis* (P. Henn.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola iquitosensis* P. Henn., Hedwigia **43**: 361. 1904.

= *Meliolinopsis iquitosensis* (P. Henn.) Beeli, Bull. Jard. Bot. Bruxelles **7**: 119. 1920.

= *Meliolina iquitosensis* (P. Henn.) Stev., Ann. Mycol. **25**: 419. 1927.

= *Irenina iquitosensis* (P. Henn.) Hansf., Proc. Linn. Soc. London **157**: 169. 1946.

Cols. epiphyllous, dense, subcrustose, smooth. Hyphae substraight, to flexuous, cells mostly 15—25×8—9 μ, densely reticulate, irregularly branched at wide angles. Ch. alternate, more or less antrorse, straight or slightly bent, 20—29 μ long; stc. cylindric to cuneate, 5—9 μ long; hc. cylindric, entire, rounded or subtruncate above, sometimes slightly angulose, 14—20×11—14 μ. Mh. mixed with ch., opposite or alternate, ampulliform. Ms. none. P. scattered or in a central group, verrucose, to 240 μ diam. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 41—48×17—19 μ.

On *Bactris* sp., Amazonia, Brazil, Ule, Mycoth. brasil. 58, Ule, Herb. brasil. 3211.

My examination of *Meliola (Irenina) kerniana* Cif., Ann. Mycol. **36**: 212, 1938, on *Bactris plumeriana*, San Domingo, indicates that

this is most probably a synonym of *A. iquitosensis*. The specimens are heavily parasitised and it is difficult to discover the details of mycelium and hyphopodia.

(1711) *Asteridiella manaosensis* (P. Henn.) Hansf., Sydowia **10**: 49. 1957.

= *Meliola manaosensis* P. Henn., Hedwigia **43**: 366. 1904.

= *Meliolinopsis manaosensis* (P. Henn.) Beeli, Bull. Jard. Bot. Bruxelles **7**: 120. 1920.

= *Irenina manaosensis* (P. Henn.) Hansf., Proc. Linn. Soc. London **157**: 170. 1946.

Cols. epiphyllous, dense, crustose, to 10 mm. diam. Hyphae undulate to sinuous, cells mostly 30—40 × 7—9 μ, opposite or irregularly branched at wide angles, densely reticulate. Ch. alternate, more or less antrorse-bent, 26—34 μ long; stc. cuneate to cylindric, 7—14 μ long; hc. irregularly rounded-angulose to sublobate, usually bent, 20—28 × 15—22 μ. Mh. mixed with ch., opposite or alternate, conoid to ampulliform, often bent, 15—23 × 5—10 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, slightly constricted, 45—41 × 11—14 μ.

On *Mauritia aculeata*, Brazil, Ule, Mycoth. brasil. 59, Ule, Herb. brasil. 3145.

(1712) *Meliola decora* Syd., Ann. Mycol. **37**: 329. 1939.

Cols. epiphyllous, to 4 mm. diam., dense, velvety. Hyphae substraight to slightly undulate, cells mostly 20—40 × 8—10 μ, branching opposite or irregular at wide angles, densely reticulate. Ch. alternate, straight or bent, 23—33 μ long; stc. cylindric to cuneate, 7—15 μ long, hc. broadly piriform and entire, to slightly irregularly angulose or sublobate, 15—20 × 12—20 μ. Mh. separate, alternate or rarely opposite, ampulliform, 17—25 × 7—10 μ. Ms. numerous, scattered and grouped around P., straight, to 290 × 9—11 μ, apex irregularly 2—3-furcate to 30 μ, the branches irregularly cristate-dentate to 15 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 52—58 × 22—25 × 18—20 μ.

On *Bactris* sp., Ecuador, Sydow, Fung. exot. exs. 1138, type.

(1713) *Meliola elaeis* Stev., Ann. Mycol. **26**: 181. 1928.

Cols. epiphyllous, dense, velvety, to 10 mm. diam. Hyphae substraight, cells mostly 15—25 × 7—8 μ, branching opposite, at wide angles, densely reticulate. Ch. alternate, spreading, straight or bent, 18—27 μ long; stc. cylindric to cuneate, 6—11 μ long; hc. cylindric-clavate, straight or bent, sometimes irregular to sublobate, 11—18 × 9—14 μ. Mh. few, separate, opposite or alternate, ampulliform, 11—25 × 9—10 μ. Ms. numerous, to 280 μ high, straight, 10—12 μ thick below, apex 2-dichotomous, 1-ry. br. to 50 μ, 2-ry to 90 μ, acute. P. scattered, verrucose, to 250 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 49—56 × 19—24 μ.

On indet. palm, Panama, Stevens 943 (type), 1266; — On *Elaeis melanococca*, Costa Rica, Stevens 823, 770; — On *E. guineensis*, Congo Belge, Steyaert 44113; Sierra Leone, Deighton 993, 1158, 1159, 1547, 1804, 2369; Congo Belge, Vanderyst 43251, 43253.

(1714) *Meliola morrowi* Stev., Ann. Mycol. 26: 183. 1928.

Cols. epiphyllous, thin, irregular or confluent. Hyphae substraight to crooked, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 15—30×5—7 μ. Ch. alternate, spreading, straight or slightly bent, 15—20 μ long; stc. cylindric, 4—7 μ long; hc. subglobose to ovate, entire, 10—14×7—12 μ. Mh. separate, opposite or alternate, ampulliform, 15—19×6—7 μ. Ms. scattered, to 150×7—8 μ, 2—3-dichotomous above, 1-ry br. about 30 μ long, spreading. P. scattered, verrucose, to 120 μ diam. (immature). Sp. oblong to subellipsoid obtuse,, 4-septate, constricted, 39—43×13—15×11—13 μ.

On indet. palm, Panama, Stevens 680, type, mixed with *Meliola palmicola*.

(1717) *Meliola acristae* Hansf. var. **coccothrinacis** (Cif.) Hansf., comb. n.

= *Meliola furcata* Lev. var. *coccothrinacis* Ciferri, Ann. Mycol. **36**: 9. 1938.

Cols. amphigenous, thin to subdense, to 4 mm. diam. or numerous and confluent. Hyphae substraight to sinuous or crooked, cells mostly 20—25×6—7 μ, branching usually opposite at wide angles, loosely to closely interwoven-reticulate. Ch. alternate, usually bent, spreading or antrorse, 16—27 μ long; stc. cylindric to cuneate, 5—11 μ long; hc. piriform to irregularly clavate or angulose to sublobate, often much bent, 11—17×10—14 μ. Mh. mostly separate, alternate or opposite, ampulliform, 14—22×7—9 μ. Ms. thinly scattered, more or less straight, to 290×8—10 μ, apex irregularly cristate-dentate to 8 μ, or shortly 2-furcate with dentate branches to 20 μ long. Mature P. not seen. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 36—44×15—16×11—13 μ.

On *Coccothrinax argentea*, San Domingo, Ciferri, Mycofl. doming. exs. 217 (type), Petrak, Mycoth. gener. 1331.

(1715) *Meliola acristae* Hansf., Sydowia Beih. **1**: 99. 1957.

= *Meliola furcata* Auctt., non Lev.

Cols. epiphyllous, thin, thinly velvety, to 3 mm. diam. Hyphae substraight to undulate, cells mostly 25—30×6—7 μ, branching opposite or irregular at wide angles, loosely reticulate, becoming dense in centre. Ch. alternate, spreading, straight or slightly bent, 18—25 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. ovate to clavate, entire, rarely rounded-angulose, 11—17×9—14 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. scattered, straight, to 200×7—10 μ, apex 1—3-dichotomous,

1-ry br. widely divergent-reflexed. to 40 μ long. ultimate teeth to 20 μ long. acute. P. scattered. verrucose. to 200 μ diam. Sp. subellipsoid. obtuse. 4-septate. constricted. 39—46 × 17—19 μ.

On *Acrista monticola*. Porto Rico. Stevens 8303-a (type). 5400; — On *Thrinax ponceana*. Porto Rico. Stevens 8590. 9074. 8017, 5308: — On *Coccothrinax alta*. Porto Rico. Stevens 6060: — On *Macrodiscus lactiflorus*. Porto Rico. Stevens 850-a: — On *Sabal causiarum*. San Domingo. Ciferri. Mycofl. doming. exs. 247: — On indet. palm. Cuba. Wright 487 (K). F. cubenses wrightianae 883 (K. F. P): — On *Euterpa* sp.. Grenada. Thaxter 7398 (F).

(1716) *Meliola acristae* Hansf. var. *cocoes* Hansf., Sydowia **11**: 51. 1958.

Cols. epiphyllous. to 1 mm. diam.. thin to subdense. slightly velvety. Hyphae substraight. branching opposite. acute to wide. loosely to closely reticulate. cells mostly 20—30 × 7—9 μ. Ch. alternate. antrorse or spreading. straight or bent. 25—35 μ long: stc. cylindric to cuneate. 7—13 μ long: hc. ovate to oblong. entire or slightly angulose. 16—23 × 12—15 μ. Mh. separate. alternate. ampulliform. 20—25 × 8—10 μ. Ms. scattered and grouped around P.. erect. straight. to 400 μ long. apex 2-furcate to 90 μ. or irregularly 2—4-dentate to 30 μ. branches widely spreading-reflexed. acute. P. scattered. verrucose. to 240 μ diam. Sp. ellipsoid. obtuse. 4-septate. constricted. 40—50 × 16—22 μ.

On *Cocos nucifera*. Brazil. Batista in IMUR 5708. type.

(1718) *Meliola melanococcae* Stev., Ann. Mycol. **26**: 183. 1928.

Cols. thin. epiphyllous. to 10 mm. diam.. somewhat velvety. Hyphae undulate to flexuous. branching opposite or irregular. loosely interwoven-reticulate. becoming denser in older colonies. cells mostly 20—50 × 5—6 μ. Ch. alternate. or often more scattered. antrorse or spreading. often bent. 20—27 μ long: stc. cylindric to cuneate. 6—10 μ long; hc. ovate. straight or bent. entire or slightly rounded-angulose. 12—20 × 8—11 μ. Mh. separate. opposite or alternate. ampulliform. 24—33 × 5—7 μ. neck elongate. bent. Ms. thinly scattered and grouped around P.. straight. to 200 × 7—9 μ. apex 3—4-dichotomous. 1-ry branches to 20 μ long. the others short. acute: sometimes the branching condensed and setae cristate. P. scattered. verrucose. to 170 μ diam. Sp. oblong. obtuse. 4-septate. constricted. 39—47 × 14—17 μ.

On *Elaeis melanococca*. Peru. Stevens 79 (type): Panama. Stevens 403, 1316 (FLS. F).

(1719) *Meliola palmicola* Wint. Hedwigia **26**: 31. 1887.

= *Meliola contigua* Karst. & Roum., Rev. Myco. **12**: 77. 1890.

Cols. amphigenous. to 15 mm. diam. or confluent. velvety. dense. Hyphae substraight to undulate. cells mostly 30—40 × 8—11 μ. branching opposite or irregular at wide angles. loosely to densely interwoven reticulate. Ch. alternate. more or less antrorse. straight or

bent, 28—42 μ long; stc. cylindric to cuneate, 10—18 μ long; hc. cylindric-clavate, rounded-angulose to irregularly and shallowly sublobate, versiform, 17—29×10—19 μ. Mh. mostly separate, alternate or opposite, ampulliform, 15—20×7—9 μ. Ms. few to numerous, straight, to 450×9—11 μ, simple and acute, or more often 2—3-dentate to 20 μ, occasionally shortly furcate with dentate branches. P. scattered, verrucose, to 240 μ diam. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 50—62×19—23 μ.

On *Sabal serrulata*, Florida, Martin in Rabh.-Wint., Fung. europ. 3547; Mississipi, Earle 20275, Tracy 11153 (CUP); Seymour in K; Florida, Underwood 2883, 2886; Tracy 6570, 6437, Sturgis in F., Webber 3835 (F), Ell. & Ev., Fung. columb. 1432; — On *S. palmetto*, U.S.A., Simmonds in USDA 1504, Thaxter 7550, Ravenel, N. Amer. fung. 81, 71, Beaumont 4875, 4618, Nash 1805, Thaxter 7363, 7364, 7369, (F), USDA 1503; — On *Bactris* sp., Brazil, in Herb. Berkeley (K); — On indet. palm, Cuba, Wright 613, 878; Tonkin, Balansa in Roum., Fung. sel. gall. 5481 (type of *M. contigua* K. & R.); Florida, Thaxter 7518 (F).

(1720) *Meliola palmicola* Wint. var. *africana* Hansf., Sydowia **10**: 81. 1957.

Cols. amphigenous, mostly epiphyllous, velvety, subdense, to 6 mm. diam. Hyphae straight or slightly undulate, cells mostly 17—30×6—9 μ, branching opposite, acute to wide, becoming closely reticulate. Ch. alternate, subantrorse, straight or antrorse-bent, 23—33 μ long; stc. cylindric to cuneate, 8—15 μ long; hc. subglobose, piriform or ovate, usually entire, rarely angulose to sublobate, 14—20×9—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×7—9 μ. Ms. numerous, straight, to 520×8—11 μ, apex 1—4-dentate to 20 μ. P. subaggregate, verrucose, to 240 μ diam. Sp. subellipsoid, obtuse, 4-septate, slightly constricted, 47—57×18—22 μ.

On *Phoenix reclinata*, South Africa, PRET 5607 (type), 9170; Uganda, Dummer 916, Hansford 1781, 2523, 759, 3553; — On *Phoenix dactylifera*, Uganda, Hansford 1860; India, Kunz in Rabh.-Wint., Fung. europ. 2846, Roum., Fung. gall. sel. 4647, Thuemen, Mycoth. univ. 2155; — On *P. sylvestris*, India, Herb. Crypt. Ind. Or. 1046, 1047, 1049; — On *P. sp.*, India, Herb. Crypt. Ind. Or. 1048, 1045. — On indet. palm, Tonkin, Duport 9 (Herb. Patouillard in F). — On *Phoenix acaulis*, Tonkin, Bon 5017 (F).

(1721) *Meliola palmicola* Wint. var. *coperniciae* (Speg.) Anal. Mus. Nac. Buenos Aires **32**: 384. 1924.

= *Meliola furcata* Lev. var. *coperniciae* Speg., Fung. Paraguay. no. 152.

Cols. amphigenous, dense, velvety, to 5 mm. diam. or often widely confluent. Hyphae substraight, cells mostly 20—25×7—9 μ,

branching opposite or irregular, acute, densely reticulate. Ch. alternate, subantrorse, straight or bent, 22—35 μ long; ste. cylindric to cuneate, 7—14 μ long; he. subglobose to oblong, rarely entire, usually angulose to sublobate, 15—21×8—10 μ. Ms. closely scattered, straight, to 480×9—11 μ, rarely simple and acute, mostly 2—4 dentate to 25 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—49×16—19 μ.

On *Copernicia australis*, Paraguay, Bertoni in SPEG 1819, type; — On *C. alba*, Argentina, SPEG 1827.

(1722) *Meliola livistoniae* Yates, Philipp. Journ. Sci., C. Botany, 12: 366, 1917.

Cols. hypophyllous, velvety, thin, to 35 mm. diam. Hyphae substraight, cells mostly 30—60×5—7 μ, branching opposite or irregular, acute to wide, loosely reticulate. Ch. alternate or thinly scattered, usually irregularly bent, 30—45 μ long; ste. cylindric, 10—25 μ long; he. deeply and irregularly lobate, versiform, 20—30×15—25 μ. Mh. mixed with ch., alternate, ampulliform, 20—25×5—7 μ, neck elongate. Ms. thinly scattered, straight, to 400×6—8 μ, apex dentate or shortly furcate with dentate branches to 20 μ long, teeth acute. P. scattered, verrucose, to 180 μ diam. (Yates, to 250 μ). Sp. subellipsoid, obtuse, 4-septate, constricted, 47—56×18—21 μ.

On *Livistonia* sp., Philippines, PBS 25632, type.

(1723) *Meliola regiae* Hansf., Sydowia 9: 23, 1955.

Cols. hypophyllous, thin, to 3 mm. diam. Hyphae substraight to slightly undulate, cells mostly 20—30×7—8 μ, branching opposite or irregular, at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 18—29 μ long; ste. cylindric to cuneate, 5—12 μ long; he. irregularly clavate, angulose to sublobate, often bent, 12—18×11—15 μ. Mh. separate, opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. thinly scattered and grouped around P., straight, to 400×8—9 μ, simple or rarely 2 dentate to 4 μ, obtuse, the upper part scabrid with cylindric projections to 3 μ high. P. scattered, verrucose to 220 μ diam. Sp. oblong to ellipsoid, obtuse, 4 septate, constricted, 40—49×18—22×14—16 μ.

On *Oreodoxa regia*, San Domingo, Ciferri, Mycofl. doming. exs. 247 (type); Ciferri 3097, 3149. — On *Roystonia borinquenia*, Porto Rico, Stevens 7279.

(1724) *Meliola amadelpha* Syd., Leafl. Philipp. Bot. 9: 3114, 1926.

Cols. epiphyllous, to 10 mm. diam., thin, effuse. Hyphae substraight, cells mostly 30—40×6—7 μ, branching opposite or irregular, very loosely reticulate. Ch. thinly scattered, never opposite, more or less antrorse, straight or bent, 30—40 μ long; ste. cuneate or sometimes irregular, 8—18 μ long, 10—15 μ wide above; he. stellate-lobate, very irregular, 20—25×20—25 μ. Mh. thinly scattered, alternate or rarely opposite, conoid, 20—28×6—8 μ. Ms. thinly scattered, straight,

simple and acute to subacute, or 2-dentate to 14 μ, to 350×8—9 μ. P. not seen. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—46×14—16 μ.

On indet. palm, Philippines, Elmer 16689, type.

(1725) *Meliola mauritiae* Stev., Ann. Mycol. **26**: 215. 1928.

Cols. epiphyllous, thin, confluent. Hyphae substraight to somewhat flexuous, branching opposite, acute, loosely interwoven-reticulate, cells mostly 30—50×6—7 μ. Ch. alternate, more or less antrorse, straight or bent, 30—38 μ long; stc. cylindric to cuneate, 9—14 μ long; hc. irregularly sinuous-lobate, versiform, 18—27×6—7 μ. Ms. scattered thinly and grouped around P., widely uncinate, obtuse to subacute, simple, to 200×7—9 μ. P. loosely scattered, verrucose, to 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—44×14—15 μ.

On *Mauritia* sp., Trinidad, Stevens 908, 925 (FLS, F).

(1726) *Meliola mauritiae* Stes. var. *raphiae* Hansf. & Deight., Mycol. Paper, IMI **23**: 73. 1948.

Cols. epiphyllous and on petioles, thin, to 8 mm. diam. or confluent. Hyphae substraight to finely sinuous, very black, cells mostly 30—40×7—8 μ, branching opposite, subrectangular, loosely to closely reticulate. Ch. alternate, straight or bent, spreading or antrorse, 28—37 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. irregularly clavate, sinuous to lobate, sometimes deeply, versiform, often bent, 18—25×13—18 μ. Mh. few, separate, opposite or alternate, ampulliform, 15—20×7—9 μ. Ms. thinly scattered, flexuous, arcuate to uncinate in upper half, simple, obtuse, to 270×7—9 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—44×15—18 μ.

On *Raphia gracilis*, Sierra Leone, Deighton 1598 (type), 2417; — On *R. vinifera*, l. c., Deighton 1997, 2257; — On *R. sp.*, Gold Coast, Deighton CB 970.

(1727) *Meliola mauritiae* Stev. var. *ancistrophylli* Hansf. & Deight., Mycol. Paper, IMI **23**: 73. 1948.

Cols. epiphyllous, to 5 mm. diam. or confluent, thin to subdense, thinly velvety. Hyphae substraight, cells mostly 30—40×7—8 μ, branching opposite, wide, loosely to closely reticulate. Ch. alternate, more or less bent, 20—30 μ long, spreading or antrorse; stc. cylindric to slightly cuneate, 6—13 μ long; hc. cylindric-clavate, usually bent, often sinuous-lobate to irregular, 14—21×10—16 μ. Mh. few, separate, opposite or alternate, ampulliform, 14—20×7—8 μ. Ms. numerous, scattered, to 280×8—9 μ, bent to loosely coiled or uncinate in upper half, apex obtuse to subacute. P. scattered, slightly verrucose, to 185 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 39—46×14—17 μ.

On *Ancistrophyllum secundiflorum*, Sierra Leone, Deighton 1962 (type), 2199.

(1728) *Meliola calami* Hansf. & Deight., Mycol. Paper, IMI **23**: 73. 1948.

Cols. epiphyllous, dense, crustose, easily secedent, to 2,5 mm. diam. Hyphae straight, cells mostly 25—30×7—8 μ, branching opposite at wide angles, close, densely reticulate. Ch. alternate, somewhat antrorse, mostly straight, 28—35 μ long; stc. cylindric to cuneate, 7—12 μ long; hc. ovate to cylindric, entire. straight or slightly bent, 15—24×10—13 μ. Mh. separate, mostly opposite, ampulliform, 15—22×7—8 μ. Ms. numerous. simple, obtuse, bent to loosely coiled in upper half, to 290×9—10 μ. P. scattered, almost smooth, to 195 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 42—50×15—18 μ.

On *Calamus deeratus*, Sierra Leone, Deighton 1315 (type). 2011.

(1729) *Meliola sparsipoda* Hansf. Sydowia **9**: 24. 1955.

Cols. hypophyllous, thin to subdense. thinly velvety, to 35×15 mm. Hyphae substraight to finely undulate, cells mostly 30—50×7—8 μ, branching opposite or irregular, acute, loosely to densely interwoven-reticulate. Ch. loosely scattered, alternate or unilateral, usually irregularly bent, mostly 30—40 μ long; stc. cylindric to cuneate, often irregular, 10—25 μ long, 9—15 μ wide above; hc. angular-globose to irregularly lobate, versiform, often bent, 20—25×14—23 μ. Mh. mostly separate, opposite or alternate, ampulliform, 18—25×7—8 μ. Ms. scattered and grouped around P., straight or slightly bent. simple, acute, to 350×8—10 μ. P. scattered. verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 55—64×20—23×15—18 μ.

On indet. palm, British Guiana, Stevens 567, type (FLS, F).

(1730) *Meliola bactridis* Hansf., Sydowia **10**: 64. 1957.

Cols. epiphyllous, dense, subvelvety, to 3 mm. long. Hyphae finely sinuous, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, becoming closely reticulate. Ch. alternate, straight or bent, finely sinuous in outline, 25—33 μ long, spreading or antrorse; stc. cylindric, 6—12 μ long; hc. irregularly ovoid to cylindric, finely crenate-sinuous, 17—22×8—12 μ. Mh. separate, on straighter hyphae, opposite or alternate, ampulliform, 18—25×7—9 μ, neck elongate. Ms. scattered and grouped around P., straight. simple, obtuse, to 300×10—11 μ. P. scattered, verrucose, to 200 μ diam. Sp. slightly ellipsoid, obtuse, 4-septate, constricted, 44—49×19—21 μ.

On *Bactris major*, Trinidad, Baker in IMI 105, type.

(1731) *Meliola hyalospora* Lev., Ann. Sci. Nat., Ser. III, Bot., **5**: 256. 1846.

Cols. amphigenous, mostly hypophyllous, dense, to 2 mm. diam. or numerous and confluent. Hyphae substraight to undulate, branching opposite or irregular at wide angles, becoming closely reticulate and almost solid, cells mostly 20—30×8—11 μ. Ch. alternate, more or less antrorse, usually bent. 25—35 μ long; stc. cuneate to cylindric,

6—15 μ long; hc. subglobose, oblong or irregular, the margin crenate to sublobate or angulose, 18—26×13—22 μ. Mh. few. separate, alternate, ampulliform, 22—26×8—10 μ. Ms. few, scattered, straight, simple, obtuse, to 300×9—10 μ. P. scattered, verrucose, to 220 μ diam. Sp. ellipsoid, obtuse, 4-septate, constricted, 54—59×22—25 μ.

On *Desmoncus* sp., Surinam, Kegel 594, type; — On *D. major*, Trinidad, Baker in IMI 103.

The type collection is heavily parasitised by *Helminthosporium;* the spores described by Leveillé as the ascospores of the *Meliola* belong to *Hyalomeliolina* sp., also present on this specimen.

Host Family 315. Pandanaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3121.6333	Cols. dense, velvety; hyphae substraight to undulate; hc. globose, entire; ms. arcuate to uncinate, obtuse	*juttingii*	(1732)
3111.6333	Cols. dense, velvety; hyphae substraight; hc. large, subglobose, crenate to sublobate; ms. straight, obtuse	*pandanicola*	(1733)
3111.4223	Cols. dense, velvety; hyphae irregular; hc. clavate, or angulose to lobate; ms. straight, obtuse	*pandani*	(1734)

(1732) *Meliola juttingii* Hansf., Reinwardtia **3**: 99. 1954.
= *Meliola pandani* Sawada (? ined.), non Sydow, 1928.

Cols. amphigenous, to 5 mm. diam. or confluent, dense, velvety, crustose, easily secedent. Hyphae substraight to slightly undulate, cells mostly 20—25×8—11 μ, branching alternate or irregular, acute, closely reticulate. Ch. alternate, more or less antrorse, straight or slightly bent, 18—35 μ long; stc. cylindric to cuneate, 5—14 μ long; hc. globose, entire or slightly angulose, 16—23×13—22 μ. Mh. separate, opposite or alternate, ampulliform, 20—30×8—10 μ. Ms. numerous, closely scattered, simple, obtuse, rarely substraight, usually arcuate to uncinate above, to 550×9—12 μ. P. scattered, verrucose, to 260 μ diam. Sp. cylindric, obtuse. 4-septate. constricted, 56—73× 22—27×19—22 μ.

On *Pandanus* sp., Java. Jutting in BO 12832, type, BO 13097, 4559. 11790, 5770, 6046, 7286, 10928, 11885, 12558; Malaya, Burkill 2817, 4115; Sumatra, Yates 120; Philippines, PBS 36156. 34627, 36331, 36391, Stevens 676; New Ireland, Shaw 1172 (WARI 7756); — On *P. odoratissimus*, Formosa, Suguki in IMI 31955.

(1733) *Meliola pandanicola* Hansf. & Deight. Mycol. Paper, IMI **23**: 74. 1948.)

1.6333

Cols. epiphyllous, dense, subcrustose, velvety, to 8 mm. diam. or

confluent, rarely hypophyllous. Hyphae substraight to slightly flexuous, cells mostly 20—30×9—12 μ, branching alternate or irregular, acute, densely reticulate and almost solid. Ch. alternate, more or less antrorse, straight or slightly bent, 35—40 μ long; stc. cylindric to cuneate, 12—18 μ long; hc. more or less globose with crenate margin or sublobate, 20—28×21—28 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 27—32×9—11 μ. Ms. numerous, scattered, straight, simple, obtuse, to 650×15 μ. P. scattered, slightly verrucose, to 260 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 62—75×22—28 μ, rarely subellipsoid.

On *Pandanus candelabrum*. Sierra Leone, Deighton 1389, type. (1734) *Meliola pandani* Syd., Ann. Mycol. Berlin **26**: 89. 1928.

Cols. amphigenous, to 20 mm. diam., dense, velvety. Hyphae substraight, irregularly or alternately branched, at acute angles, loosely to closely reticulate, cells mostly 25—35×6—8 μ. Ch. alternate or more scattered, more or less antrorse, straight or bent, 17—30 μ long; stc. cylindric, 4—10 μ long; hc. irregularly crenate to lobate or angulose, 13—22×12—20 μ, often bent, versiform. Mh. separate, alternate, ampulliform, 16—22×6—8 μ, few. Ms. numerous, scattered, straight, simple, acute, to 600×10—12 μ. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid obtuse, 4-septate, constricted, 42—49×17—20 μ.

On *Pandanus affinis*. British North Borneo, Elmer 20062, 20075, (BO, F).

Host Family 316. Cyclanthaceae.

(1735) *Meliola carludovicae* Hansf., Sydowia **9**: 11. 1955.

Cols. epiphyllous, dense, to 4 mm. diam. or confluent. Hyphae substraight, cells mostly 20—30×7—9 μ, branching opposite, wide, closely reticulate and almost solid in centre. Ch. opposite or alternate, usually antrorse-bent, 15—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. ovate to clavate, entire, 10—16×8—11 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 15—22×7—10 μ. Ms. thinly scattered, straight, simple and obtuse to subacute, or 2—3-dentate to 8 μ, up to 400×10—12 μ. P. scattered, verrucose, to 240 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 45—52×17—20 μ.

On *Carludovica* sp., Brazil, Ule, Herb. brasil 2231, type (S).

Host Family 319. Velloziaceae.

(1736) *Asteridiella barbaceniae* Hansf., Sydowia **10**: 47. 1957.
= *Irenina barbaceniae* Hansf., Proc. Linn. Soc. London **160**: 136. 1948.

Cols. amphigenous, dense, subcrustose, smooth, to 2 mm. diam. Hyphae substraight, with the transverse hyphae undulate, cells

mostly 15—20×7—9 μ, branching opposite or irregular at varying angles, very closely reticulate and almost solid. Ch. alternate (less than 1% opposite), straight or antrorse-bent, 14—22 μ long; stc. cylindric to cuneate, 3—9 μ long; hc. cylindric to piriform and entire, or irregularly rounded-angulose, versiform, often bent, 11—18×10—15 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 12—17×7—9 μ. Setae none. P. scattered, verrucose, to 200 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—45×16—20 μ.

On *Barbacenia purpurea*, Brazil, Ule in Rabh.-Wint.-Pazschke, Fung. europ. 3849, type.

Host Family 326. Orchidaceae.

(1737) *Meliola orchidacearum* Cif., Ann. Mycol. 36: 218. 1938.

Cols. epiphyllous, dense, slightly velvety, to 3 mm. diam. Hyphae substraight, cells mostly 20—30×7—9 μ, branching usually opposite, acute, closely reticulate. Ch. alternate or to 10% opposite, more or less antrorse, 15—24 μ long; stc. cylindric to cuneate, 3—7 μ long; hc. subglobose to oblong, entire, 12—17×8—13 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—23×8—10 μ. Ms. mostly grouped around P., straight, simple, obtuse to subacute, to 800×8—10 μ. P. scattered. verrucose, to 230 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 47—56×21—24×18—20 μ.

On *Epidendrum cochleatum*, San Domingo, Ciferri, Mycofl. doming. exs. 254, type.

Host Family 331. Cyperaceae.

Synopsis of accepted species of *Meliolineae:*

Meliola

3411.6234	Cols. dense, velvety, subcrustose; hyphae substraight; hc. oblong-clavate or sublobate; ms. acute; ps. acute to 120 μ; sp. rounded ..	*argentina*	(1738)
3411.6333	Cols. dense, velvety; hyphae substraight; hc. subglobose to lobate; ms. acute; ps. acute, to 120 μ; sp. ellipsoid	*argentina* var. *leeuwenii*	(1739)
3411.4223	Cols. dense, velvety; hyphae straight to crooked; hc. subglobose to sublobate; ms. acute; ps. acute; sp. bent ellipsoid	*argentina* var. *hawaiiensis*	(1740)
3411.5224	Cols. dense, subvelvety; hyphae substraight to tortuous; hc. lobate; ms. acute; ps. acute, to 110 μ; sp. apiculate	*apiculata*	(1741)
3411.4224	Cols. dense, velvety; hyphae substraight; hc. subglobose to sublobate; ms. obtuse to subacute; ps. acute, to 110 μ; sp. obtuse	*cyperi*	(1742)

3411.3223	Cols. thin, velvety; hyphae substraight to flexuous; hc. cylindric or sublobate, often bent to uncinate; ms. acute; ps. to 130 μ, acute; sp. apiculate	*circinans*	(1743)
3411.4223	Cols. thin; hyphae substraight to flexuous; hc. bent cylindric to sublobate; ms. acute; ps. acute, to 120 μ; sp. apiculate	*circinans* var. *thynchosporae*	(1744)
3411.3223	Cols. dense, velvety; hyphae straight to flexuous; hc. ovate or sublobate; ms. acute; ps. acute, to 90 μ; sp. obtuse	*intricata*	(1745)
3111.5323	Cols. very dense, subvelvety; hyphae substraight to undulate; hc. clavate or angulose; ms. acute; sp. obtuse	*mapaniae*	(1746)
3111.4232	Cols. dense; velvety; hyphae substraight to crooked; hc. subglobose or sublobate; ms. acute; sp. obtuse	*italica*	(1747)
3111.4232	Cols. dense; hyphae substraight to sinuous; hc. subglobose to sublobate; ms. few, subacute; sp. apiculate	*uleana*	(1749)
3111.4223	Cols. thin to subdense; hyphae substraight to crooked; hc. ovate to lobate; ms. acute; sp. obtuse	*caricis*	(1749)

(1738) *Meliola argentina* Speg., Anal. Soc. Cient. Argentina, **9**: 177. 1880.

Cols. hypophyllous, dense, velvety, 1—2 mm. diam. or confluent, subcrustose. Hyphae substraight, cells msotly 15—25×7—10 μ, branching alternate or irregular, densely radiating-reticulate, almost solid. Ch. alternate, antrorse, straight or bent, 22—34μ long; stc. cylindric to cuneate, 7—15 μ long; hc. cylindric, clavate or irregularly rounded-angulose to shallowly lobate, straight or bent, 14—22× 9—17 μ. Mh. not seen in type (in other specimens separate, alternate or opposite, ampulliform). Ms. numerous, straight, simple, acute, to 1100×10—12 μ. P. scattered, verrucose, to 210 μ diam.; ps. 0—6, erect-spreading, to 120×6—8 μ, simple, acute, more or less curved, not uncinate. Sp. oblong to narrowly ellipsoid, ends rounded or sometimes attenuate, not apiculate, 4-septate, constricted, 50—62× 15—18 μ, the middle cell often the largest.

On *Cyperaceae* indet., Rio di Uelo (? Argentina), type (SPEG 519, S); — On *Scirpus giganteus*, Brazil, Ule, Herb. brasil. 1327, with sp. 45—55×15—17 μ (K); — On *Lagenocarpus tremulus*, British Guiana, Stevens 436 (FLS, F); — On *Scirpus asper*, Argentina, SPEG 514; — On *Cyperus* sp., Porto Rico, Stevens 3946; — On *Rhynchospora corymbosa*, Sierra Leone, Deighton 2203; — On *Gahnia gaudichaudii*, Hawaii, Stevens 879; — On *G. clarkei*, New South Wales, Fraser 227; — On *G.* sp., New South Wales, Fraser 8, 119; — On *Vincentia angustifolia*, Hawaii, Stevens 344, 196, 705, 1144, 603; — On *Brumea meyeri*, Hawaii, Stevens 711, Shear 620,

Stevens 703; — On *Rhynchospora thyrsoidea*, Hawaii, Stevens 680, heavily parasitised and det. doubtful; — On *Cladium meyenii*, Hawaii, Heller 2249, Stevens 704; — On *Cyperaceae* indet., Philippines, PBS 32085 (FLS).

(1739) *Meliola argentina* Speg. var. *leeuwenii* Hansf., Sydowia **10**: 63. 1957.

Cols. amphigenous, to 4 mm. diam., very dense, velvety. Hyphae substraight to undulate, branching alternate or irregular, not opposite, acute, densely radiating-reticulate and becoming almost solid, cells mostly 15—25×9—10 μ. Ch. alternate, antrorse, straight or bent, 25—35 μ long; stc. cuneate to cylindric, 6—14 μ long; hc. versiform, from subglobose to irregular, often bent, rounded-angulose to shallowly, or rarely deeply lobate, 16—27×13—19 μ. Mh. separate in centre of colony, alternate, ampulliform, 18—25×7—10 μ. Ms. scattered, straight, rigid, simple, acute, to 750×11—14 μ. P. scattered, verrucose, to 220 μ diam.; ps. 2—6, circinate, simple, acute, to 120×8—10 μ. Sp. ellipsoid, obtuse, 4-septate, constricted, 50—61×20—24×18—21 μ.

On *Cyperaceae* indet., New Guinea, Van Leeuwen in BO 5607, type.

(1740) *Meliola argentina* Speg. var. *hawaiiensis* Hansf., Sydowia **11**: 51. 1958.

Cols. amphigenous, mostly hypophyllous, elliptic to linear, to 5×2 mm., dense. velvety. Hyphae straight or crooked, branching alternate or irregular, acute, closely reticulate, becoming nearly solid, cells mostly 10—20×7—9 μ. Ch. alternate, antrorse or spreading, straight or bent, 18—25 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. irregularly subglobose, margin from almost entire to sublobate, 11—18×10—18 μ. Mh. not seen. Ms. numerous, straight, simple, acute, to 800×11—13 μ. P. in central group, verrucose, to 170 μ diam.; sp. 0—6, circinate, acute, to 130×8—9 μ. Sp. bent ellipsoid, obtuse, 4-septate, constricted, 38—45×15—17 μ, curvature most in central cell.

On *Gahnia leptostachya*, Hawaii, Stevens 672 (type), 361,435, 226.

(1741) *Meliola apiculata* Hansf., Proc. Linn. Soc. London **160**: 137. 1948.

Cols. epiphyllous, dense, to 3 mm. diam., subvelvety. Hyphae substraight, undulate or tortuous, cells mostly 20—30×8—9 μ, branching alternate or irregular, rarely opposite, at wide angles, densely reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, straight or bent, 6—15 μ long; hc. very irregulraly and shallowly rounded-lobate, versiform, often shaply bent, 12—22×12—20 μ. Mh. few, mixed with ch., usually alternate, narrow ampulliform, 22—26×7—8 μ. Ms. thinly scattered, straight, rigid, simple, acute, to 1050×10—12 μ. P. scattered,

verrucose, to 180 μ diam.; ps. 0—6, erect-incurved, simple, acute, to 110×8 μ, arising from sides and upper half. Sp. oblong with apiculate ends, 4-septate, constricted, 50—60×17—19 μ.

On *Scleria* sp., Porto Rico, Stevens 5252, type; — On *Cyperus* sp., Trinidad, Thaxter 7514 (F); — On *Lagenocarpus tremulus*, British Guiana, Stevens 436, 907; — On *Cyperaceae* indet., Cuba, right 878 p. p.

In most collections this is mixed with *M. circinans* or with *M. argentina*.

(1742) *Meliola cyperi* Pat. in Gaillard, Le Genre Meliola, 1892, p. 70.

= *Meliola argentina* Speg. var. *africana* Hansf., Sydowia **9**: 9. 1955.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam., dense, velvety, not crustose. Hyphae straight to slightly undulate, cells mostly 20—30×6—8 μ, branching alternate or irregular, acute, closely radiating-reticulate. Ch. alternate, more or less antrorse, straight or bent, 18—28 μ long; stc. cylindric to cuneate, 5—13 μ long; hc. from subglobose to bent cylindric or irregularly rounded-angulose to sublobate, 10—18×9—13 μ. Mh. mostly separate, alternate, ampulliform, 17—25×6—8 μ. Ms. scattered, opaque, simple, straight, obtuse to subacute, stiff, to 1100×10—13 μ. P. in loose central group verrucose to 180 μ diam.; ps. 1—6 arising from upper half of P. circinate acute to 110×7—8 μ. Sp. oblong obtuse 4-septate sonstricted 35—42×12—15 μ the ends rounded. not apiculate.

On *Cyperus* sp., Congo Belge, Dybowski, type (Herb. Patouillard in F); — On *Cladium jamaicense*, South Africa, PRET 20399; — On *Cyperus flabelliformis*, Uganda, Hansford 2731; Congo Belge, Vanderyst 42969; — On *Cyperaceae* indet. Congo Belge, Hendrickx 2744, Vanderyst 29939; — On *Cyperus* ? *papyrus*, Congo Belge, Vanderyst 32915.

(1743) *Meliola circinans* Earle, Bull. New York Bot. Gard., **3**: 304. 1904.

Cols. 5—10 mm. diam. or widely confluent, velvety, easily secedent. thin, amphigenous, mostly epiphyllous. Hyphae flexuous to substraight, cells mostly 16—20×5—7 μ, branching usually alternate, acute, loosely reticulate. Ch. alternate, cylindric, straight or sinuous, spreading, 18—27 μ long; stc. cylindric, 4—9 μ long; hc. mostly cylindric, straight, sinuous or uncinate, entire or rarely angulose to sublobate and then wider, mostly 15—19×5—7 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 16—20×6 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 600×8—9 μ. P. scattered, globose, verrucose, to 150 μ diam.; ps. 6—8, from upper half of P., incurved. simple, acute, to 130×6 μ. Sp. oblong, the ends apiculate, 4-septate, constricted, 30—37×11—13 μ.

On *Rhynchospora aurea*, Porto Rico, Heller 6384, type; — On *Scleria* sp., Porto Rico, Stevens 5252 p. p.; — On *Mariscus jamaicensis*, Porto Rico, Stevens 9221, 9203, Stevenson 5989 p. p.; — On *Rhynchospora marisculus*, San Domingo, Ciferri, Mycofl. doming. exs. 190; — On *Rhynchospora* sp., U.S.A., 1632, 982 (? Ravenel), (K); — On *Cyperaceae* indet., Porto Rico, Fink 2175, Whetzel 580; Cuba, Wright 878 p. p.

(1744) *Meliola circinans* Earle var. *rhynchosporae* Hansf., Sydowia **9**: 13. 1955.

Cols. amphigenous, to 1 mm. diam. or numerous and confluent, rather thin. Hyphae substraight to flexuous. cells mostly 20—25 × 5—6.5, branching mostly alternate or unilateral, loosely reticulate. Ch. alternate, more or less antrorse, straight or bent, 16—25 μ long; stc. cylindric. 5—10 μ long; hc. bent cylindric with rounded apex. to irregularly rounded-angulose or sublobate, versiform, 11—17 × 7—15 μ. Mh. few, mixed with ch., alternate, rarely opposite, ampulliform, 17—20 × 7—9 μ. Ms. scattered, straight, simple, acute to 600 × 8—10 μ. P. scattered, verrucose, to 160 μ diam.; ps. 0—4, erect-incurved, simple, acute, to 120 × 6—7 μ, arising from upper half of P. Sp. oblong, apiculate at ends, 4-septate, constricted, 32—41 × 13—15 μ.

On *Rhynchospora dodecandra*, Florida, Nash 1803, type; — On *Mariscus jamaicensis*, Porto Rico, Stevens 5286; Stevenson 5989 p. p.; Bermuda, Whetzel in FLS 4933. — On *Cyperaceae* indet., Florida, Thaxter 7375, 7378 (F).

(1745) *Meliola intricata* Syd., Philipp. Journ. Sci., C. Botany, 8: 268. 1913.

Cols. amphigenous and caulicolous, scattered or confluent, dense, velvety, 20—80 mm. long. Hyphae straight or flexuous, cells mostly 15—30 × 7—11 μ, branching alternate or irregular, acute, very densely reticulate and almost solid. Ch. alternate, straight or bent, somewhat antrorse, 18—26 μ long; stc. cuneate to cylindric, 3—8 μ long; hc. ovate and entire or irregularly rounded-angulose to sublobate, 12—19 × 10—14 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform, 20—30 × 7—10 μ. Ms. numerous, scattered, rigid, straight, opaque, simple, acute, to 800 × 10—12 μ. P. scattered, verrucose, to 200 μ diam.; ps. 0—5, from upper half, simple, acute, incurved, to 90 μ long. Sp. oblong, obtuse, not apiculate, 4-septate, constricted, 32—38 × 11—15 μ.

On *Scirpus grossus*, Philippines, PBS 7152 (type), 23751, 1339, 32120; — On *Mariscus jamaicensis*, Porto Rico, Stevens 9221 p. p.; Bermuda, Whetzel 130, Seaver 65; — On *Cladium mariscus*, San Domingo, Ciferri 2772, Ciferri, Mycofl. doming. exs. 177; — On *C. effusum*, U.S.A., Holm in (S), with setae to 1100 μ and ps. to 150 μ; Nash, Plants of Florida 1827 (F); — On *Cyperus* sp., Florida, Sturgis in F. — On *Cyperaceae* indet., Florida, Thaxter 7380 (F).

(1746) *Meliola mapaniae* Yates, Philipp. Journ. Sci., C. Botany, 12: 367. 1917.

Cols. amphigenous, very subvelvety, to 2 mm. diam. Hyphae substraight to undulate, cells mostly 15—25×8—10 μ, branching alternate, acute, densely reticulate and almost solid. Ch. alternate, more or less closely antrorse, usually straight, 28—36 μ long; stc. cuneate to cylindric, 8—14 μ long; hc. clavate, entire or rounded-angulose, 19—25×12—17 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—25×8—10 μ. Ms. not numerous, scattered, straight, opaque, simple, acute, to 800×11—13 μ. P. loosely scattered, or subaggregate in centre, verrucose, to 180 μ diam., not setose. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 47—52×19—21 μ.

On *Mapania* sp., Philippines, PBS 24640, type; — On *M. palustris*, Java, BO 12824.

(1747) *Meliola italica* (Sacc.) Stev., Ann. Mycol. 26: 282. 1928.
= *Meliola cyperi* Pat. var. *italica* Sacc., l. c., 1: 24. 1903.

Cols. epiphyllous, dense, to 2 mm. diam., or sometimes confluent, velvety, easily secedent. Hyphae substraight to crooked, cells mostly 15—25×5—7 μ, branching opposite or irregular, acute, densely reticulate. Ch. alternate, straight or bent, spreading or antrorse, 13—24 μ long; stc. cylindric, 4—9 μ long; hc. subglobose, piriform, or irregularly angulose to sublobate, versiform, 15—20×6—9 μ. Ms. fairly numerous, scattered, straight, simple, acute, to 480×10—12 μ. P. in central group, verrucose, to 230 μ diam., not setose. Sp. oblong, obtuse to somewhat attenuate-rounded at ends, not apiculate, 4-septate, constricted, 37—47×13—16 μ.

On *Cladium mariscus*, Italy, Sacc., Mycoth. ital. 1022 (type), Rehm, Ascomyc. 1498; France, Heim in P.

(1748) *Meliola uleana* Pazschke in Gaill., Le Genre Meliola, 1892, p. 90.

(3111.4232)

= *Meliola apiculata* Hansf. var. *minor* Hansf., Sydowia 9: 8. 1955.

Cols. amphigenous and caulicolous, to 1 mm. diam., dense. Hyphae substraight to sinuous, cells mostly 12—20×7—8 μ, branching alternate or irregular, rarely opposite, acute, densely reticulate. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; hc. subglobose to rounded-angulose or sublobate, versiform, 12—23×9—13 μ. Mh. separate, alternate, ampulliform, 18—25×7—9 μ. Ms. few, scattered and grouped around P., straight, simple, subacute, to 400×9—10 μ. P. scattered, immature. Sp. oblong, apiculate at ends, 4-septate, constricted, 39—45×15—16 μ.

On *Eleocharis* sp., Brazil, Ule, Herb. brasil. 223 (K, S); — On *Cladium occidentalis*, Cuba, Wright 609 (K), with somewhat shorter ch., and spores 43—50×14—16×10—12 μ.

(1749) **Meliola caricis** Hansf., spec. n.

Cols. amphigenous, to 1 mm. diam. or confluent, thin to subdense. Hyphae substraight to crooked, branching alternate or irregular, acute, becoming closely reticulate, cells mostly 20—30×6—8 μ. Ch. alternate, usually bent 20—48 μ long; stc. cylindric to cuneate, often irregularly bent, 5—28 μ long; hc. ovate to ellipsoid and antire, or more often irregularly lobate, often bent, versiform, 16—22×11—19 μ. Mh. separate in centre of colony, opposite or alternate, ampulliform, 15—19×6—8 μ. Ms. scattered and grouped around P., straight, simple, acute, to 540×9—11 μ. P. in loose central group, verrucose, to 200 μ diam., not setose. Sp. oblong, obtuse, 4-septate, constricted, 39—46×15—17 μ.

On *Carex* sp., Guatemala, Standley 65274, type (F).

Host Family 332. Gramineae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

3101.3220	Cols. ...; hyphae ...; hc. globose to lobate; sp. ovate-ellipsoid	*stevensonii*	(1750)

Meliola

3141.5332	Cols. dense, velvety; hyphae straight to undulate; hc. lobate; ms. 2—4-dichotomous, tips acute	*phyllostachydis*	(1751)
3141.5331	Cols. dense, velvety; hyphae substraight to undulate; hc. ovate to sublobate; ms. 2—3-furcate, br. bifid to 80 μ	*bambusae*	(1752)
3141.5231	Cols. dense, crustose, velvety; hyphae substraight to sinuous; hc. ovate or angulose; ms. 2-dichotomous	*arundinis*	(1753)
3141.4221	Cols. dense, velvety; hyphae substraight to tortuous; hc. angulose to lobate; ms. 2—3-dichotomous	*arundinis* var. *angulosa*	(1754)
3141.4223	Cols. dense, subvelvety; hyphae straight to crooked; hc. subglobose-piriform or angulose; ms. furcate to 20 μ or dentate	*sacchari*	(1755)
3131.4222	Cols. dense; hyphae substraight to sinuous; hc. ovate-oblong or angulose; ms. cristate-dentate	*imperatae*	(1756)
3131.4221	Cols. dense, subcrustose; hyphae substraight to tortuous; hc. angulose, versiform; ms. cristate-dentate	*themedae*	(1757)
31⅓1.5323	Cols. dense, velvety; hyphae substraight to tortuous; hc. lobate; ms. 2—3-furcate-dentate or simple and acute	*tenuis*	(1758)
31⅓1.3223	Cols. dense, velvety; hyphae sinuous to crooked; hc. piriform ro sublobate; ms. subacute to obtuse, or bifid to 35 μ	*setariae*	(1759)

3111.5233	Cols. thin to subdense, subvelvety; hyphae straight to undulate; hc. lobate; ms. acute ..	*panici* var. *chilensis*	(1760)
3111.5221	Cols. dense; hyphae straight; hc. subglobose to angulose; ms. obtuse	*andropogonis*	(1761)
3111.4221	Cols. dense; hyphae substraight to crooked; hc. ovate to sublobate; ms. obtuse, clavate ..	*hercules*	(1762)
3111.5222	Cols. subdense, subvelvety; hyphae straight to undulate; hc. subglobose to angulose; ms. obtuse	*panici* var. *major*	(1763)
3111.4322	Cols. subdense, velvety; hyphae substraight to crooked; hc. subglobose to lobate; ms. acute	*boedijniana*	(1764)
3111.4332	Cols. dense, velvety; hyphae substraight to sinuous; hc. subglobose to lobate; ms. obtuse to subacute	*panici* var. *uniolae*	(1765)
3111.4223	Cols. thin to subdense; hyphae substraight to crooked; hc. subglobose to sublobate; ms. acute	*panici*	(1766)
3111.4222	Cols. thin, subvelvety; hyphae straight to flexuous; hc. subglobose to sublobate; ms. acute	*panici* var. *lasiacidis*	(1767)
3111.4222	Cols. subdense, subvelvety; hyphae straight to crooked; hc. irregularly lobate; ms. acute.	*panici* var. *olyrae*	(1768)
3111.4223	Cols. subdense to crustose, velvety; hyphae substraight to undulate; hc. angulose to lobate; ms. obtuse to subacute	*panici* var. *vetiveriae*	(1769)
3111.3224	Cols. thin, subvelvety; hyphae substraight to undulate; hc. globose-clavate or sublobate; ms. acute	*panici* var. *panicicola*	(1770)
3111.4232	Cols. dense; hyphae sinuous; hc. crenulate; ms. acute	*panici* var. *aristidae*	(1771)

(1750) *Asteridiella stevensonii* (Cif.) Hansf., Sydowia **10**: 50. 1957.
= *Meliola (Irenina) stevensonii* Cif., Mycopathologia **7**: 189. 1954.

Cols. epiphyllous, to 3 mm. diam., irregular or rounded. Hyphae fuscous, irregularly branched, 6—8 μ wide. Ch. fairly numerous; hc. globose, cylindric to irregular, often several-lobate, alternate or unilateral, 15—22×11—19 μ; stc. 3,5—5 μ long. Mh. ampulliform, opposite, few, mixed with ch., 17—20×6—9 μ. P. globose, to 120 μ diam. Sp. ovate to ellipsoid, not or slightly constricted, 4-septate, obtuse, 32—35×11—13 μ, the central cell the largest.

On *Exotheca paniculata*, San Domingo, Ekman 3120, type. (Not seen by present author).

(1751) *Meliola phyllostachydis* Yamam., Trans. Nat. Hist. Soc. Formosa, **31**: 26. 1941.

= *Meliola bambusicola* Hansf., Proc. Linn. Soc. London, **158**: 31. 1946.

Cols. epiphyllous, rarely also hypophyllous, dense, velvety. to 13 mm. diam. Hyphae straight, undulate or sinuous, cells mostly 15—30μ long; branching alternate or irregular, acute, densely reticulate. Ch. alternate, straight or bent, 19—35 μ long; more or less antrorse; stc. cylindric to cuneate, 5—15 μ long; hc. irregular, versiform, 3—5-lobate, 13—26×10—23 μ. Mh. separate, few, alternate or opposite, ampulliform, 14—20×8—10 μ. Ms. numerous, to 340×9—13 μ, 2—4-dichotomous above, branches widely divergent, 1-ry to 80 μ, 2-ry to 50 μ, 3-ry to 20 μ, acute. P. subaggregate, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—60×18—21×14—16 μ.

On *Pseudosasa uzawai*, Formosa, Yamamoto, type; — On *Phyllostachys makinoi*, Formosa, Yamamoto (USDA); — On *P. edulis*, Formosa, Yamamoto; — On *Bambusa* sp., South India, Somayajulu in Herb. Coimbatore, type of *M. bambusicola;* — On *Arundinaria simonii*, Japan, Sakurai (S ex Sydow).

(1752) *Meliola bambusae* Pat., Rev. Mycol. **10**: 140. 1888.

Cols. epiphyllous, subdense, to 8 mm. diam. Hyphae substraight to undulate, cells mostly 20—30×7—8 μ, branching alternate or irregular, acute, closely reticulate. Ch. alternate, more or less antrorse, often recurved at apex, 23—38 μ long; stc. cylindric to cuneate, 7—14 μ long; hc. from ovate-cylindric and entire, to irregularly bent and sinuous-angulose to sublobate, versiform, 15—28×9—12 μ. Mh. separate, alternate or opposite, ampulliform, 16—21×7—9 μ. Ms. fairly numerous, scattered, straight, to 270×10—13 μ, 2—3-furcate above, branches spreading, to 40 μ long, bifid to 80 μ with 2-dentate apex. P. scattered, verrucose, to 280 μ diam. Sp. oblong to subellipsoid, 4-septate, constricted, 48—57×18—22 μ.

On *Bambusa* sp., Tonkin, Balansa in Roum., Fung. sel. gall. 4433, Balansa s. n. in Herb. Paris (type).

(1753) *Meliola arundinis* Pat., Journ. de Bot., 1897, p. 348.

= *Meliola dolabrata* Syd., Englers Bot. Jahrb. **56**: 431. 1921.

Cols. amphigenous, to 4 mm. diam., dense, velvety, easily secedent, subcrustose. Hyphae substraight, simuous or flexuous, cells mostly 15—25×8—9 μ, branching alternate or irregular, rarely opposite, acute, very densely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 20—28 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. ovate to subglobose and entire, or slightly irregular to rounded-angulose, rarely sublobate, 12—15×11—16 μ. Mh. few, separate, opposite or alternate, ampulliform. Ms. numerous, straight, to 200× 12—16 μ, usually 2-dichotomous above with spreading branches, 1-ry

to 20 μ, 2-ry to 30 μ long, acute, or less commonly again 2-dentate. P. subaggregate, verrucose, to 220 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—55×16—19 μ.

On *Arundo donax*, Tonkin, Bon 5086, type (F); — On *Phragmites longivalvis*, Formosa, Yamamoto; — On *P. mauritianus*, Uganda, Hansford 3146, 3403, 3542; — On *P. vulgaris*, Queensland, Johnson s. n.; — On *Saccharum* sp., Philippines, PBS 18024; — On *Phragmites karka*, India, FLS 4651, 4652.

(1754) *Meliola arundinis* Pat. var. *angulosa* Hansf., Proc. Linn. Soc. London, **160**: 138. 1948.

Cols. epiphyllous, dense, velvety, to 2 mm. diam. Hyphae substraight to very crooked, cells mostly 15—20×7—10 μ, branching opposite or irregular at wide angles, closely reticulate and nearly solid. Ch. alternate, usually bent, more or less antrorse, 16—26 μ long; stc. cuneate to cylindric, 5—10 μ long; hc. irregularly angulose to shallowly lobate, rarely almost entire, 11—18×6—9 μ. Ms. numerous, straight, to 200×10 μ, apex 2-dichotomous with reflexed-spreading branches as in type. P. scattered, verrucose, ro 170 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 40—46×15—16 μ.

On *Phragmites* sp., Philippines, PBS 9101 (type), 6767, 14568.

(1755) *Meliola sacchari* Syd., Ann. Mycol. **12**: 548. 1914.

Cols. mostly epiphyllous, to 2 mm. diam. or widely confluent, dense, subvelvety. Hyphae substraight with transverse branches sinuous to crooked, cells mostly 15—30×7—9 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, straight or bent, more or less antrorse, 20—32 μ long; stc. cuneate to cylindric, 5—12 μ long; hc. subglobose to piriform, entire or usually angulose, 14—20×12—17 μ. Mh. few, separate, opposite or alternate, ampulliform, 17—20×7—9 μ. Ms. fairly numerous, scattered, with shorter ones ground P., straight, to 530×9—11 μ, apex 2—5-dentate to 20 μ, the shorter setae often 2—3-furcate to 20 μ, branches dentate to 15 μ, the whole then cristate. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 40—49×16—19×13—14 μ.

On *Saccharum spontaneum*, Philippines, PBS 20051, type.

(1756) *Meliola imperatae* Syd., Ann. Mycol. **15**: 186. 1917.

Cols. amphigenous, 2—5 mm. long, dense. Hyphae substraight or sinuous, cells mostly 15—30×6—9 μ, branching opposite or irregular, wide, densely reticulate. Ch. alternate, spreading, 18—25 μ long, straight or bent; stc. cylindric to cuneate, 3—11 μ long; hc. ovate to cylindric and entire, or usually irregularly rounded-angulose to sublobate, 12—19×9—17 μ. Mh. mixed with ch., opposite or alternate, few, conoid to ampulliform, 12—15×7—9 μ. Ms. not numerous, scattered, straight, 250—400×9—11 μ, apex 2—6-dentate-cristate to 15 μ, rarely simple and acute. P. scattered or loosely aggregate,

globose, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—47×12—18 μ.

On *Imperata cylindrica*, Philippines, PBS 23790 (type), 24069; PBS 7151, with some setae to 600 μ long.

(1757) *Meliola themedae* Stev. & Rold., Philipp. Journ. Sci. **56**: 59. 1935.

Cols. amphigenous, 1—3 mm. diam., dense, subcrustose. Hyphae substraight to tortuous, cells mostly 18—30×6—8 μ, branching opposite or irregular at wide angles, densely reticulate and almost solid. Ch. alternate, spreading to antrorse, straight or bent, 18—30 μ long; stc. cylindric, 3—10 μ long; hc. versiform, rounded angulose, straight or bent, 12—18×11—15 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×6—8 μ. Ms. fairly numerous, scattered, straight, to 200×9—11 μ, apex cristate with many teeth or very short dentate branches, to 15 μ long. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—47×16—18× 12—13 μ.

On *Themeda gigantea*, Philippines, Stevens 794, type (FLS, CUP).

(1758) *Meliola tenuis* B. & C., Grevillea **7**: 49. 1878 and Syll. Fung. **1**: 762. 1882.

Cols. epiphyllous, dense, velvety, to 3 mm. diam. Hyphae substraight along the leaf, with crooked transverse branches, cells mostly 15—20×7—10 μ, branching closely alternate or unilateral, acute, closely reticulate and nearly solid. Ch. alternate, more or less antrorse, bent to nearly straight, 18—32 μ long; stc. cylindric to cuneate, 6—13 μ long; hc. versiform, usually irregularly lobate, straight or bent, 10—19×8—16 μ. Mh. separate, opposite or alternate, ampulliform, 15—22×7—10 μ. Ms. numerous, straight, scattered and grouped around P., to 550×9—11 μ, apex simple and acute, or more often 2—3-dentate to 12 μ, rarely 2-furcate to 45 μ. P. scattered, verrucose, to 190 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—54×19—22 μ.

On *Arundinaria* sp., U.S.A., Ravenel, Fung. amer. exs. 331 (type), Ravenel 2482 (K); Mellichamps s. n. (FLS); Ellis & Everh., Fung. Columb. 1033, Ellis, N. Amer. Fungi 3421 (CUP); — On *A. tecta*, U.S.A., Newman 2289 (CUP);

(1759) *Meliola setariae* Hansf. & Deight., Mycol. Paper, IMI **23**: 75. 1948.

Cols. amphigenous, to 3 mm. diam., dense, velvety. Hyphae sinuous to crooked, sometimes the longitudinal hyphae substraight, cells mostly 20—30×6—7 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, straight or bent, spreading or antrorse, 18—28 μ long; stc. cylindric to cuneate, 5—12 μ long; hc. piriform to irregularly angulose or sublobate, 12—16×8—13 μ, often

bent, versiform. Mh. separate, opposite or alternate, conoid to ampulliform. Ms. numerous, scattered, straight, to 900×8—9 μ, apex simple and subacute, to obtuse, or bifid to 35 μ. P. scattered, verrucose, to 130 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 32—37×10—12 μ.

On *Setaria chevalieri*, Sierra Leone, Deighton 1588 (type); Gold Coast, Deighton CB 945; — On *S. sulcata*, Brazil, Usteri 6 (S), with ms. to 350 μ.

(1760) *Meliola panici* Earle var. *chilensis* Hansf., Sydowia Beih. **1**: 113. 1957.

Cols. epiphyllous, to 3 mm. diam., or sometimes confluent, thin to subdense, thinly velvety. Hyphae straight or undulate, branching alternate or irregular, acute, becoming closely reticulate, cells mostly 25—40×8—10 μ. Ch. alternate, more or less antrorse, usually bent, 30—40 μ long; stc. cuneate to cylindric, 8—18 μ long; hc. versiform, irregularly lobate, often bent, 20—26×12—22 μ. Mh. separate, alternate or opposite, ampulliform, 14—19×8—10 μ. Ms. scattered and grouped around P., straight, simple, acute, to 550×9—10 μ. P. scattered, verrucose, to 260 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 45—52×15—19×13—14 μ.

On "bamboo" (? *Chusquea* sp.), Chile, Thaxter 6661 (type), 6674 (F).

(1761) *Meliola andropogonis* Stev. & Rold., Philipp. Journ. Sci., **56**: 62. 1935.

Cols. epiphyllous, to 3 mm. diam., dense. Hyphae straight or slightly undulate, cells mostly 12—20×7—8 μ, branching opposite at wide angles, closely reticulate. Ch. alternate, more or less antrorse, usually straight, 17—20 μ long; stc. cylindric, 3—7 μ long; hc. subglobose, ovate, or irregularly rounded-angulose, 12—16×10—15 μ. Mh. separate, opposite or alternate, ampulliform, 15—19×6—8 μ. Ms. few, scattered, straight, simple, obtuse, to 280×10—11 μ. P. scattered, slightly verrucose, to 150 μ diam. Sp. cylindric to subellipsoid, obtuse, 4-septate, constricted, 45—51×17—19 μ.

On *Andropogon halepensis*, Philippines, Stevens 1577, type (FLS, CUP).

(1762) *Meliola hercules* Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **118**: 316. 1909.

Cols. epiphyllous, to 5 mm. diam., dense. Hyphae substraight to undulate or crooked, cells mostly 20—30×7—9 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, straight or bent, spreading or antrorse, 19—26 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate, clavate or irregular, often bent, entire or mostly angulose to sublobate, 13—18×10—19 μ. Mh. few, separate or sometimes mixed with ch., mostly alternate, ampulliform, 14—19×7—9 μ. Ms. fairly numerous, scattered, erect, straight, clavate, to

180×10—12 μ thick below, enlarged at apex up to 24 μ diam., obtuse, entire, opaque black. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 42—47×16—18×12—14 μ, sometimes the central cell slightly the largest.

On ? *Anthistitia* sp., Java, Von Hoehnel, type; — On *Saccharum spontaneum*, Java, BO 12344, 11737; Philippines, PBS 23780 (F).

The broadly clavate setae distinguish this species from all others.

(1763) *Meliola panici* Earle var. *major* Hansf., Sydowia 9: 45. 1955.

Cols. epiphyllous and on leaf-sheaths, subdense, subvelvety, to 3 mm. diam., or numerous and confluent. Hyphae straight along the leaf, with undulate transverse branches, cells mostly 25—40×7—9 μ, branching opposite or irregular, acute or wide, closely reticulate and almost solid in centre. Ch. alternate, more or less antrorse, straight or bent, 20—30 μ long; stc. cylindric to cuneate, 6—12 μ long; hc. from subglobose and entire. to irregularly clavate and angulose, straight or slightly bent, sometimes sublobate, 12—22×11—18 μ. Mh. mostly separate. alternate or opposite, ampulliform, 15—20×8—10 μ. Ms. scattered, more or less straight, simple, obtuse, to 420×9—11 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 46—52×16—18 μ.

On *Panicum* sp. (? or *Setaria*), Brazil, Ule, Herb. brasil. 182-b, type (S, ex Rehm).

(1764) **Meliola boedijniana** Hansf., spec. n.

Cols. epiphyllous, subdense, velvety, to 2 mm. diam. or confluent. Hyphae substraight along leaf, crooked transversely, cells mostly 15—30×7—8 μ, branching opposite or irregular at wide angles, closely reticulate and becoming almost solid. Ch. alternate or very rarely opposite, straight or irregularly bent, 20—30 μ long; stc. cylindric to cuneate, often bent, 3—14 μ long; hc. subglobose, wide ovate, piriform, or very irregularly lobate, often bent, 12—20×10—20 μ. Mh. mixed with ch., few, alternate or opposite, conoid to ampulliform, 17—26×8—10 μ. Ms. closely scattered and grouped around P., numerous, straight, simple, acute to 450×10—12 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 44—49×19—21 μ.

On *Gramineae* indet., Java, BO 12913. type; other spores, possibly foreign occur, up to 51×25 μ.

On *Miscanthus japonicus*, Formosa, Yamamoto (USDA).

(1765) *Meliola panici* Earle var. *uniolae* Hansf., Sydowia 9: 45. 1955.

Cols. mostly epiphyllous, to 2 mm. diam. or confluent, dense, velvety. Hyphae substraight to sinuous, cells mostly 15—20×7—9 μ, branching alternate or irregular, acute, rarely opposite, densely reticulate. Ch. alternate, more or less antrorse, often irregularly bent,

20—32 μ long; stc. cylindric to cuneate, 5—14 μ long; hc. subglobose, widely piriform or usually angulose to irregularly lobate, 12—23 × 11—17 μ. Mh. separate, opposite or alternate, 15—20 × 7—9 μ, ampulliform. Ms. closely scattered and grouped around P., straight, simple, obtuse to subacute, to 500 × 9—10 μ. P. in central group, verrucose, to 210 μ diam. Sp. cylindric to wide ellipsoid, obtuse, 4-septate, constricted, 40—48 × 18—21 μ.

On *Uniola virgata*, San Domingo, Ciferri, Mycofl. doming. exs. 205-bis, type (K). — On indet. *Gramineae*, Jamaica, Thaxter 7434 (F).

(1766) *Meliola panici* Earle, Muehlenbergia **1**: 12. 1901.

Cols. epiphyllous, to 2 mm. diam. or sometimes confluent, thin to subdense. Hyphae substraight along the leaf, sinuous to flexuous transversely, cells mostly 20—25 × 7—9 μ, branching opposite or irregular at wide angles, closely reticulate. Ch. alternate, more or less antrorse, often curved, 16—23 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. from subglobose or piriform and entire, to rounded-angulose or slightly 3-lobate, 10—15 × 10—13 μ, straight or bent. Mh. separate, opposite or alternate, ampulliform, 12—15 × 7—8 μ. Ms. scattered, straight, simple, acute when mature, to 600 × 7—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—40 × 13—14 μ.

On *Panicum latifolium*, Porto Rico, Heller 4343, type.

I have examined numerous collections from all parts of the tropics, which vary more or less around this type, the great majority having the hc. usually more irregular; it has proved impossible for me to separate out distinct species from amongst these, though some are considered worthy of varietal distinction. I therefore include under *M. panici* Earle the following as synonyms:

Meliola chaetochloae Stev., Ann. Mycol. **26**: 283, 1928.

M. stenotaphri Stev., Illinois Biol. Monogr. **2**: 41. 1916.

M. substenospora Hoehn., Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **118**: 317. 1909.

M. intricata Syd. var. *major* Beeli, Bull. Jard. Bot. Bruxelles **7**: 96. 1920.

M. substenospora Hoehn. var. *rottboelliae* Rehm, Ann. Mycol. **15**: 192. 1917.

The following specimens are considered to belong to *M. panici:*

On *Amadelphia leptocoma*, Sierra Leone, Deighton 1441,2110. — On *Andropogon bicornis*, San Domingo, Ciferri 4279, Ciferri, Mycofl. doming. exs. 205; Panama, Stevens 162; Porto Rico, Stevens 8168, 7751. — On *A. leucostachyus*, Porto Rico, Stevens 8671. — On *A.* sp., Porto Rico, Stevens 9477. — On *A. squarrosus*, Singapore, Baker, Fung. Malay. 456.

On *Chaetochloa sulcata*, Ecuador, Stevens 138, type of *M. chaetochloae*, with hc. more regular than usual, ms. few to 310 μ, sp. 33—38 × 13—14 μ. — On *Chloris petraea*, Porto Rico, Stevens 7810. — On *Chusquea pittieri*, Panama,

Stevens 1141, 1165. — On *C.* sp., Venezuela, Muller 2015 (CUP). — On *Cyrtococcum setigerum*, Sierra Leone, Deighton 2166.

On *Homolepis aturensis*, Panama, Stevens 217.

On *Ichnanthus pallens*, Porto Rico, Whetzel 579, Stevens 7441, 829, 6701, 7485, 5755. — On *Imperata cylindrica*, Philippines, PBS 36236. — On *Isachne angustifolia*, Porto Rico, Whetzel 3335. — On *I. arundinacea*, Ecuador, Stevens 67, 71; Costa Rica, Stevens 368.

On *Lithachne pauciflora*, Porto Rico, Whetzel 2678 (CUP).

On *Miscanthus* sp., Philippines. Stevens 1533.

On *Oplismenus compositus*, Java, BO 13380, 15226. — On *O. hirtellus*, Sierra Leone, Deighton 2215, 2167, with ms. to 600 μ, hc. usually crenulate to lobate. — On *O. setarius*, Porto Rico, Stevens 8776. — On *O. undulatifolius*, Philippines, Stevens 1990, 2077. — On *Oryza punctata*, Uganda, Greenway 7064.

On *Paspalum schroeberianum*, Porto Rico, Stevens 8803. — On *Panicum glutinosum*, Porto Rico, Stevens 5749, 8730, 4389, 4368, 8957, 8680, 5560, 5672, 8934, 8187, 8647, 4375, 5947, 4801, 5746; Whetzel 578 (CUP). — On *P. maximum*, Congo Belge, Vanderyst 2752 p. p., 3474. — On *P. rudgei*, British Guiana, Stevens 978. — On *P. megiston*, Panama, Stevens 213. — On *Panicum* sp., Congo Belge, Vanderyst 2689, type of *M. intricata* var. *major*; Philippines, Baker in PBS 1204, PBS 36141; Surinam, in Herb. Paris (as "*Meliola panicea* Mont." ined.). — On *Phragmites* sp., Java, Von Hoehnel (type of *M. substenospora*) (K); Von Hoehnel in Rehm, Ascomyc. 1874. — On *Pogonatherum paniceum*, Borneo, Clemens in BM;

On *Rottboellia exaltata*, Philippines, Sydow, Fung. exot. exs. 382, Baker, Fung. malay 45, Baker 4311, PBS 487, 1255, 1839, Stevens 690, 954, 1544, 1658. — On *R. ophiuroides*, Philippines, Sydow, Fung. exot. exs. 173.

On *Saccharum arundinaceum*, Philippines, PBS 32108. — On *S. spontaneum*, Java, BO 12344; Philippines, PBS 1753, Stevens 950, 812, 1464. — On *Setaria chevalieri*, Sierra Leone, Deighton 2255, with hc. elongate to 19 μ. — On *S. palmifolia*, Philippines, Stevens 523, 706.

On *S.* sp., Congo, Vanderyst 2752. — On *Stenotaphrum hermaphroditum*, Porto Rico, Stevens 7940, 7852, 7810, 8023. — On *S. secundatum*, Porto Rico, Stevens 4304, type of *M. stenotaphri*; San Domingo, Ciferri, Mycofl. doming. exs. 194.

On *Themeda villosa*, Java, BO 7049. — On *Trichopteryx afroflammida*, Congo Belge, Vanderyst 2039, with setae to 1000 μ. — On *T.* sp., Uganda, Hansford 2659. — On *Thysanolaena maxima*, Java, BO 12402, 14442; Philippines, Stevens 1597. — On *T.* procera, Java, BO 13535.

On *Gramineae* spec. indet., Panama, Stevens 1020-a, 750, 566, 871, 1111, 914; Porto Rico, Stevens 9441, 5659, 5979, 6796; Philippines, PBS 35860, 25865; Congo Belge, Vanderyst 3754; Jamaica, Thaxter 7445, 7433, 7340; Grenada, Thaxter 7397, 7385 (F).

(1767) *Meliola panici* Earle var. **lasiacidis** (Toro) Hansf., comb. n.
= *Meliola lasiacidis* Toro in Chardon & Toro, Monogr. Univ. Porto Rico, B: 2: 121. 1934.

Cols. epiphyllous, rather thin, to 2 mm. diam., thinly velvety. Hyphae straight to flexuous, cells mostly 20—30×6—8 μ, branching opposite or irregular, acute, loosely to rather closely reticulate. Ch. alternate, subantrorse, straight or bent, 20—27 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. subglobose, clavate or irregularly and shallowly lobate, straight or bent, 12—17×11—17 μ. Mh. mostly

separate, alternate or opposite, ampulliform, 15—20×7—8 μ. Ms. scattered, substraight, simple, acute, to 450×8—9 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong to slightly ellipsoid, obtuse, 4-septate, constricted, 36—44×13—15 μ.

On *Lasiacis sorghoidea*, Venezuela, Chardon & Toro 640, type (CUP); Sydow, Fung. venez. 305, 260; Porto Rico, Stevens 1151, 8151; Panama, Stevens 111, 1161, 478; British Guiana Stevens 884; Costa Rica, Stevens 604; Ecuador, Stevens 147, 314, Sydow, Fung. exot. exs. 720; — On *L. compacta*, Porto Rico, Stevens 4663; — On *L. divaricata*, Porto Rico, Chase in FLS 5846, Fink 454, Stevens 4189, 7738, 4237, 4195, 6796, 4298, 4189, 6810; San Domingo, Ciferri 2264, 2820 (S); Ecuador, Sydow, Fung. exot. exs. 1141; — On *L. maculata*, San Domingo, Ciferri 2754 (S); — On *L. oaxacoensis*, Panama, Stevens 734; — On *L. procerrima*, Panama, Stevens 704, 550, 1165, 1014; — On *L. rudifolia*, Panama Stevens 942; — On *L. ruscifolia*, Panama, Stevens 364, 284, 369; Honduras, Standley 55269; — On *L. swartziana*, Porto Rico, Stevens 356; — On *L.* sp., Costa Rica, Standley 47066.

In this variety the hc. are somewhat larger and wider than in the type, and are also rather more irregular and lobate.

(1768) *Meliola panici* Earle var. *olyrae* Hansf., Sydowia 10: 82. 1957.

Cols. amphigenous, each on a pale yellow spot, to 4 mm. diam., subdense, subvelvety. Hyphae substraight with very crooked transverse branches, cells mostly 20—30×6—7 μ branching opposite or irregular at wide angles, loosely to closely reticulate. Ch. alternate, usually irregularly bent, 20—35 μ long; stc. cylindric, straight or bent, 6—19 μ long; hc. very irregularly lobate, often deeply, versiform, often bent. 13—20×8—15 μ. Ms. few, separate, opposite or alternate, ampulliform. Ms. closely scattered, straight, simple, acute, to 420× 8—10 μ. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—41×14—16 μ, the middle cell often widest and longest.

On *Olyra latifolia*, Porto Rico, Stevens 7390 (type), 8959, 587, 1959 p. p., 486, 7485, 6805, 7587, 7486, 7518, 9159, Whetzel 552; Jamaica, Thaxter 6685, 6665 (F); Trinidad, IMI 6290-b, 64854-b; Panama, Stevens 428, 955, 880; British Guiana, Stevens 977; Costa Rica, Stevens 801, 839; Uganda, Hansford 2088; Jamaica, Thaxter 7215, 6677, 7218, 7327, 7329 (F); Grenada, Thaxter 7398 (F); — On *Pharus parvifolius*, San Domingo. Ciferri, Mycofl. doming. exs. 205-ter.

(1769) *Meliola panici* Earle var. *vetiveriae* Hansf. & Deight., Sydowia **10**: 82. 1958.

Cols. amphigenous, subdense to crustose, velvety, to 4 mm. diam. Hyphae substraight to undulate, cells mostly 25—35×7—8 μ, bran-

ching opposite or irregular ,at wide angles, closely reticulate. Ch. alternate, straight or bent, antrorse or spreading, 20—38 μ long; stc. cylindric to cuneate, 7—18 μ long; hc. irregularly sinuous, angulose or lobate, 14—21×10—15 μ. Mh. septate, opposite or alternate, ampulliform. Ms. scattered, fairly numerous, straight, simple, obtuse to subacute, to 600×9—11 μ. P. scattered, verrucose, to 150 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 36—44× 14—17 μ.

On *Vetiveria zizanoides*, Sierra Leone, Deighton 1797, type; — On *V. nigritana*, Sierra Leone, Deighton 2013, 2025.

In this variety and in the preceding, var. *olyrae*, the hc. attain their maximum of size and irregularity, as compared with those specimens included under the species itself, above.

(1770) *Meliola panici* Earle, var. **panicicola** (Syd.) Hansf., comb. n.
= *Meliola panicicola* Syd., Ann. Mycol. **12**: 552. 1914.

Cols. amphigenous, mostly epiphyllous, to 2 mm. diam. or confluent, rather thin, subvelvety. Hyphae substraight to undulate, cells mostly 20—30×5—7 μ. branching mostly opposite at wide angles, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 13—22 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. globose to clavate, entire or 2—3-rounded-angulose to sublobate, 10—14×8—14 μ. Mh. few, separate, opposite or alternate. ampulliform, 12—15×6—8 μ. Ms. fairly numerous, straight, simple, acute, to 1100×9—11 μ. P. scattered, verrucose, to 160 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 34—39×11—13 μ.

On *Panicum palmaefolium*, Philippines, PBS 22121 (type); Java, BO 12697; Stevens 700; — On *P. filipes*, Philippines, PBS 23239; Stevens 873, 746, 1499, 1506; PBS 33985; — On *Panicum* sp., Borneo, Ramos 2121; Stevens 2024, 1862, 1874, Philippines. — On *Setaria* sp., Congo Belge, Vanderyst 2732 (BRUX). — On *S. palmifolia*, Philippines, Stevens 523; — On *Stipa dregena*, South Africa, PRET 12358.

(1771) *Meliola panici* Earle var. **aristidae** (Batista & Silva) Hansf., comb. n.
= *Meliola aristidae* Batista & Silva, An. IV Congr. Nac. Soc. Bot. Brazil, 1953, p. 99.

Cols. epiphyllous, dense, velvety, to 3 mm. diam. or confluent. Hyphae undulate to crooked, branching alternate, acute, closely reticulate, cells 17—30×6—8 μ. Ch. alternate, antrorse or spreading, usually irregularly bent, 18—28 μ long; stc. cuneate to cylindric, 4—10 μ long; hc. subglobose to oblong, versiform, often malleiform-bent, margin crenate to shallowly lobate, 11—19×10—14 μ. Mh. separate, alternate, ampulliform, 15—20×6—8 μ. Ms. numerous, scattered and grouped around P., straight, simple, acute when fully mature, to 400×7—9 μ. P. subaggregate in centre of colony, ver-

rucose, to 205 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 34—41×13—15×10—12 μ.

On *Aristida marginalis*, Brazil, Lima in IMUR 11067, type.

Host Family. Taxaceae.

Synopsis of accepted species of *Meliolineae:*

Asteridiella

2101.4230	Cols. effuse; hc. ovoid, entire	*pitya*	(1772)
2101.4230	Cols. ?; hc. entire	*taxi*	(1773)
2101.5220	Cols. subdense; hyphae substraight; hc. globose to piriform, entire	*podocarpi* var. *portoricensis*	(1774)
2101.5230	Cols. thin; hyphae substraight to undulate; hc. globose-ovate, entire	*podocarpi*	(1775)

Meliola

2111.6343	Cols. dense; hyphae substraight to undulate; hc. angulose to sublobate; ms. obtuse to subacute	*peltata*	(1776)

(1772) *Asteridiella pitya* (Sacc.) Hansf., Sydowia **10**: 49. 1957. (2101.4230)

= *Meliola pitya* Sacc., Nuov. Giorn. Bot. ital. **23**: 185. 1916.

= *Irenina pitya* (Sacc.) Stev., Ann. Mycol. **25**: 448. 1927.

Cols. amphigenous or sometimes on twigs, effuse, 2—3 mm. long. Hyphae ramose, 7—10 μ thick. Ch. obovoid, 12—14 μ long, alternate; hc. to 12 μ wide. P. globose, to 180 μ diam. Sp. not seen.

On *Taxus canadensis*, S.U.A.

Material of this species has not been available to the present writer. Stevens l. c., gives the above formula, and says there is a close relation with *Asteridiella podocarpi*, but does not state whether he examined the type.

(1773) *Asteridiella taxi* (Sawada) Hansf., Sydowia **10**: 50. 1957.

= *Irenina taxi* Sawada, Rept. Forest Exp. Sta. Tokyo, **46**: 137. 1950.

Cols. hypophyllous or rarely epiphyllous, covering large parts of the leaf. Hyphae 7—10 μ wide. Ch. alternate, 15—20×10—13 μ; hc. entire. P. glabrous, to 270 μ diam. Sp. oblong, obtuse, 3-septate, slightly constricted, the end cells short, 44—49×15—17 μ.

On *Taxus cuspidata*, Japan, Sawada.

This is known to the present author only from the original description, which is very incomplete.

(1774) *Asteridiella podocarpi* (Doidge) Hansf., var. *portoricensis* Hansf., Sydowia Beih. **1**: 96. 1957.

Cols. mostly epiphyllous, to 4 mm. diam. or widely confluent, subdense, smooth. Hyphae substraight, branching opposite at wide

angles, closely interwoven-reticulate, cells mostly 25—40×7—8 μ. Ch. alternate, subantrorse or spreading, straight or bent, 18—24 μ long; stc. cylindric to cuneate, 4—7 μ long; hc. globose to piriform, entire, 13—17×11—15 μ. Mh. not seen. P. loosely scattered, globose, verrucose, to 170 μ diam. (immature). Sp. bent ellipsoid, obtuse, 3-septate, constricted, 44—54×17—20 μ, the end cells smaller than middle cells, and in young spores paler.

On *Podocarpus coriaceus*, Porto Rico, Stevens 6774, type (FLS).

It is possible that further collections in Porto Rico may prove that this belongs to *Irenopsis;* in the type material the remains of two perithecia were seen to bear 1—3, straight, obtuse, septate, brown setae, to 100×6—7 μ.

(1775) *Asteridiella podocarpi* (Doidge) Hansf., Sydowia **10**: 49. 1957.

= *Meliola podocarpi* Doidge, Trans. Roy. Soc. South Africa, **5**: 725. 1917.

= *Irene podocarpi* Doidge, South African Journ. Nat. Hist., **2**: 40. 1920.

= *Irenina podocarpi* (Doidge) Stev., Ann. Mycol. **25**: 447. 1927.

= *Irene anisomera* Syd., Ann. Mycol. **15**: 194. 1917.

Cols. amphigenous, mostly epiphyllous, thin, smooth, to 5 mm. diam. or confluent. Hyphae substraight to undulate, cells mostly 16—20×6—7 μ, branching opposite at wide angles. loosely to rather closely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 13—20 μ long; stc. cylindric to cuneate, 2—5 μ long; hc. globose to ovate, entire, 10—14×9—12 μ. Mh. not seen. P. scattered or subaggregate, verrucose, to 250 μ diam., surface cells obtuse conoid, to 12 μ high. Sp. subfusoid, obtuse, usually slightly bent, 3-septate, rather strongly constricted, 50—56×14—16 μ, the end cells smaller, and sometimes paler than the middle cells.

On *Podocarpus elongata*, South Africa, PRET 1822, 8897, 11561, 12322, 14967, 17166, 17217; — On *P. falcata*, South Africa, PRET 11552; — On *P. thunbergii*, South Africa, PRET 889, 1748, 8889, 9102, 14960, 14968; — On *P.* sp., Philippines, PBS 25114 (type of *I. anisomera*).

(1776) *Meliola peltata* Doidge, Trans. Roy. Soc. South Africa, **5**: 727. 1917.

Cols. amphigenous, to 7 mm. diam., smooth or velvety, dense. Hyphae substraight to undulate, cells mostly 10—15×6—9 μ, branching opposite or irregular, very close, acute, the hyphae densely radiate to form a solid plate. Ch. alternate or unilateral, irregular in distribution, closely antrorse, straight or antrorse-bent, 25—45 μ long; stc. cylindric to cuneate, 6—20 μ long; hc. mostly irregularly clavate, rounded, truncate or angulose to sublobate above, versiform, 14—30×7—18 μ. Mh. not seen. Ms. few to numerous, straight, simple, obtuse

to subacute, to 740×9—11 μ. P. few, globose, verrucose, to 360 μ diam., surface cells rounded to obtusely conoid. Sp. ellipsoid, obtuse, straight or bent, 3-septate, strongly constricted, 55—70×23—27 μ, mostly about 60 μ long, the end cells smaller than the middle cells.

On *Podocarpus latifolius*, South Africa, PRET 2436, 10934; — On *P. falcata*, South Africa, PRET 17218; — On *P. henkelii*, South Africa, PRET 11551, 32217.

Host Family. Pinaceae.

(1777) **Asteridiella pinicola** (Dearness) Hansf., comb. n.

= *Meliola pinicola* Dearness, Mycologia **18**: 244. 1926.

= *Irenina pinicola* (Dearn.) Stev., Ann. Mycol. **25**: 449. 1927.

Cols. often surrounding the leaves, to 2 mm. long, dense, smooth. Hyphae substraight to crooked, branching opposite or irregular, densely reticulate, cells mostly 15—25×8—9 μ. Ch. alternate, antrorse or spreading, often much bent, 25—30 μ long; stc. cylindric to cuneate, 7—11 μ long; hc. versiform, irregularly rounded-angulose to sublobate, 15—21×12—19 μ. Mh. very few, mixed with ch., alternate, ampulliform, 18—24×9—10 μ. P. scattered, rough, to 250 μ diam., surface cells conoid, to 30 μ high, with bent, subacute apices. Sp. bent ellipsoid, obtuse, 3-septate, slightly constricted, 46—58×15—21 μ.

On *Pinus echinata*, U.S.A., Hedgcock 24394, type (FLS).

Host Family. Gnetaceae.

(1778) *Meliola gneti* Hansf., Reinwardtia **3**: 85. 1954.

Cols. hypophyllous, to 8 mm. diam., dense, velvety. Hyphae substraight, cells mostly 20—40×7—8 μ, branching opposite, acute, loosely to closely reticulate. Ch. alternate, or to about 3% opposite, spreading or antrorse, straight or bent, 15—24 μ long; stc. cylindric to cuneate, 4—10 μ long; hc. globose to ovate, entire, 11—15×9—13 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—40×7—11 μ. Ms. scattered and grouped around P., straight, simple, acute, to 900×10—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 44—49×18—20 μ.

On *Gnetum gnemon*, Java, BO 12548, type; Philippines, PBS 32169, 36386 (FLS).

Host Family. Selaginellaceae.

(1779) **Irenopsis selaginellarum** (Cif.) Hansf., comb. n.

= *Meliola selaginellarum* Ciferri, Ann. Mycol. **36**: 220. 1938.

Cols. amphigenous, covering the leaflet, thin, smooth. Hyphae sinuous to tortuous, cells mostly 15—20×6—7 μ, branching opposite at wide angles, loosely reticulate. Ch. alternate, straight or bent,

12—20 μ long; stc. cylindric to cuneate, 3—6 μ long; hc. oblong to irregular with rounded lobes, often bent, sometimes subglobose and entire, 10—18×7—13 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×7—9 μ. P. in loose central group, verrucose, to 170 μ diam., each with 2—10 spreading-erect, straight, simple, obtuse, continuous, dark brown, smooth setae, to 150×6—7 μ, arising from sides and upper half, occasionally torulose-bent at apex. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 37—45×13—15 μ.

On *Selaginella s.olonifera*, San Domingo, Ciferri, Mycofl. doming. exs. 238, type.

Host Class. Filices.

(1780) **Irenopsis ekmanii** (Cif.) Hansf., comb. n.
= *Meliola (Irenopsis) ekmanii* Cif., Mycopathologia **7**: 124. 1954.

Cols. hypophyllous, covering sori of host, effuse, indeterminate. Hyphae branched, septate, 2—7 μ thick, dark brown. Ch. unilateral or opposite, subglobose, subelongate or irregular in shape, 7,5—15 μ, rarely more, in diam.; hc. transverse to stc.; stc. 3,5—5 μ long. Mh. very abundant, opposite or unilateral, ampulliform, 11—15×5—8 μ. P. to 175 μ diam., surface cells rounded, projecting; ps. 2—4, rarely more, straight, light brown at base, subhyaline at obtuse apex, sometimes slightly inflated or geniculate above, 43—75 to 85—115 μ long, delicate and flexible; P. globose, to 115 μ diam. Sp. ovate to ellipsoid, ends apiculate, 4-septate, slightly constricted, mostly 36×15 μ.

On *Lygodium oligostachyum*, San Domingo, Ekman 2742, type (not seen by present author).

(1781) *Irenopsis pteridicola* (Stev.) Hansf., Sydowia **9**: 39. 1955.
= *Meliola pteridicola* Stev., Illinois Biol. Monogr. **2**: 28. 1916.

Cols. amphigenous, mostly epiphyllous, to 5 mm. diam., dense. Hyphae substraight to undulate, cells mostly 20—30×7—9 μ, branching usually opposite at wide angles, loosely to closely reticulate. Ch. alternate, spreading or subantrorse, straight or bent, 17—25 μ long; stc. cylindric to cuneate, 3—10 μ long; hc. ovoid to cylindric, often bent or even subuncinate, entire, 12—19×9—12 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 16—18×6—8 μ. P. scattered, verrucose, to 230 μ diam., ps. 0—8, erect-spreading, straight or bent at tip, simple, obtuse, dark brown, continuous, thick-walled, smooth, to 110×6—8 μ, arising from sides and upper half of P. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—42×14—15 μ.

On *Aneimia adiantifolia*, Porto Rico, Stevens 7814 (type), 7269, 8315, Whetzel 2783 (CUP); — On *A.* sp., Porto Rico, Stevens 6594; Trinidad, Thaxter 6673 (F); — On *Adiantum latifolium*,

Porto Rico, Stevens 7418, 8182, Whetzel 582, 620, 581, Chardon 868, 873 (CUP); — On *A.macrophyllum*, Costa Rica, Stevens 333, 484; — On *A. petiolatum*, Panama, Stevens 1098; — On *Adiantum* sp., Panama, Stevens 1086; Porto Rico, Stevens 8795, 1063; — On *Asplenium cristatum*, San Domingo, Ciferri, Mycofl. doming. exs. 108, Ciferri & Ekman 3137; — On *Lygodium raditum*, Panama, Stevens 164, 209, 995; — On unknown ferns, Panama, *Stevens* 582; Porto Rico, Kevorkian 72 (F); Brazil, Ule, Herb. brasil. 1322 (S, as *Meliola tubaraoensis* Rehm, ined.); Trinidad, Baker in IMI 19320. — On *Lygodium* sp., Trinidad, Thaxter 7456 (F); — On *Avemia* sp., Jamaica, Thaxter 7210 (F).

(1782) *Irenopsis cornuta* (Rehm) Hansf., Sydowia **9**: 1. 1955.
= *Meliola cornuta* Rehm, Hedwigia **40**: 163. 1901.

Cols. amphigenous, mostly hypophyllous, thin, spreading over the leaflet. Hyphae straight to undulate, cells mostly 25—40×6—7 μ, branching opposite or irregular, acute, loosely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 15—30 μ long; stc. cylindric, 5—15 μ long; hc. ovate to piriform, entire, 10—15× 9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 15—20×6—8 μ. P. loosely scattered, verrucose, to 160 μ diam.; ps. 0—6, erect-spreading, simple, obtuse, to 120×7—8 μ, dark brown, thick-walled, smooth, the apex bent, uncinate or loosely coiled, indistinctly 1—2-septate. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 35—39×11—13 μ.

On *Dicksonia* sp., Brazil, Ule, Herb. brasil. 860, type (S, F), 1002 (P). — On *Lygodium polymorphum*, Panama, Stevens 123, 780.

Under the apperently unpublished name *Meliola adianti* Rehm, the specimen Ule, Herb. brasil. 1326 (S), on *Adiantum trapeziforme*, Brazil, shows very thin colonies approximating to the above, but with larger hyphopodia; hc. globose to piriform, entire, 12—17× 10—15 μ; P. to 150 μ diam., all immature and without setae; sp. 37×12 μ. The specimen is heavily parasitised by *Helminthosporium dorycarpum* Mont., and is insufficient to separate as a distinct species.

(1783) *Meliola angiopteridis* Hansf., Reinwardtia **3**: 91. 1954.

Cols. amphigenous, dense, velvety, to 8 mm. diam. or confluent. Hyphae sinuous to tortuous, cells mostly 20—25×5—7 μ, branching opposite at wide angles, closely reticulate and becoming nearly solid. Ch. alternate or to 10% opposite, usually bent, 11—19 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to ovate, entire, often transverse, 9—15×9—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—30×7—9 μ. Ms. numerous, straight, simple, acute, to 450×9—10 μ. P. in close central group, verrucose, —160 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 29—38×13—14×10—12 μ.

On *Angiopteris erecta*, Sumatra, BO 4670; Java, BO 13214 (type).

Host Family Unknown.

In the past a considerable number of species of the group have been described "on unknown hosts", and it has been a matter of extreme difficulty to compare them with species on known host plants. I am much indebted to the staff of the Herbarium, Royal Botanic Gardens, Kew, for their invaluable assistance in determination of the hosts of a number of type specimens. Similarly a considerable number of host plants from the East Indies have been determined for me by the staff of the Herbarium Bogoriense. Thus the number of species of *Meliola* and the other genera of the present group, now remaining "on unknown hosts" has been reduced to those in the following pages.

These species all need re-collection from their type localities, and matching with specimens on known host plants, so that they can be fitted into the arrangement given above. A number of these species were founded many years ago, and when their hosts can be determined it is more than likely that their names will ante-date those of other species in the body of the present work. In the following account, these species are arranged alphabetically under each genus.

(1784) *Appendiculella echinata* (Gaill.) Hansf., Sydowia **9**: 50. 1955.

= *Meliola echinata* Gaill., Le Genre *Meliola*, 1892, p. 61.

= *Irene echinata* (Gaill.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

Cols. hypophyllous, thin, to 4 mm. diam., smooth. Hyphae substraight to slightly and finely undulate, cells mostly 30—40× 7—8 μ, branching opposite or irregular, acute, loosely reticulate. Ch. alternate, spreading or antrorse, straight or bent, 20—28 μ long; stc. cuneate to cylindric, 6—12 μ long; hc. rounded to sublobate, versiform, 13—19×11—16 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—30×7—8 μ, neck elongate. P. loosely scattered, globose, rough, to 200 μ diam,; app. 4—8, conoid to subcylindric, bent at apex, not uncinate, dark brown, smooth, to 50 μ long by 20—25 μ diam. at base, attenuate to obtuse apex about 10 μ wide. (Sp. oblong, obtuse, 4-septate, constricted, 50—52×16—20 μ. — Gaillard, no spores seen in my mounts).

On indet. Dicotyledon, Sumatra, Forbes 3132, type (P).

(1785) **Appendiculella rimbachii** (Pat.) Hansf., comb. n.

= *Meliola rimbachii* Pat. in Pat. & Lagerh., Bull. Herb. Boiss. **3**: 66. 1895.

= *Irene rimbachii* (Pat.) Stev., Ann. Mycol. **25**: 425. 1927.

Cols. hypophyllous, dense, to 5 mm. diam., or larger when parasitised, smooth, each causing an indefinite brownish leafspot, visible on upper surface. Hyphae crooked, branching opposite or irregular

at varying angles, densely reticulate, cells mostly 15—28×6—10 μ. Ch. alternate or opposite, usually irregularly bent, antrorse or spreading, 18—30 μ long; stc. cuneate to cylindric, 2—10 μ long; hc. irregularly clavate or ovate, entire or angulose, 14—22×9—14 μ. Mh. few, mixed with ch., alternate or opposite, ampulliform, 12—19×6—9 μ. P. scattered or loosely aggregate, verrucose, to 220 μ diam.; app. 4—6, erect or spreading, to 125 μ long, tapering from 20—25 μ thick at base to 12—15 μ at obtuse, bent to uncinate apex, pale brownish, darker at base and apex, thin-walled, continuous, transversely striate. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 43—49×17—20×13—15 μ.

On unknown host, Ecuador, Rimbach in Herb. Patouillard, type (F).

If the host could be determined as *Acalypha* sp. or a closely related genus of *Euphorbiaceae*, the above name would replace *Appendiculella arecibensis* (Stev.) Hansf., no. 438 above.

(1786) *Appendiculella tuberculata* (Stev.) Toro, Mycologia **17**: 144. 1925.

= *Meliola tuberculata* Stev., Illinois Biol. Monogr. **2**: 22. 1916.

= *Irene tuberculata* Stev., Ann. Mycol. **25**: 428. 1927.

Cols. amphigenous, mostly epiphyllous, dense, to 3 mm. diam., smooth. Hyphae undulate to sinuous, cells mostly 25—30×6—8 μ, branching irregular, not commonly opposite, acute. loosely to closely reticulate. Ch. alternate, more or less antrorse, straight or bent, 18—25 μ long; stc. cuneate to cylindric, 4—8 μ long; hc. ovate and entire, or irregularly and shallowly rounded-lobate, 13—18×8—16 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, to conoid, 15—20×6—9 μ. P. scattered, verrucose, to 220 μ diam.; surface cells short conoid, or prolonged into bent, conoid, acute or obtuse appendages. translucent dark brown, smooth, to 50 μ high by about 30 μ diam. at the base. Sp. cylindric, obtuse, 4-septate, constricted, 33—38×13—14 μ.

On indet. Dicotyledon, Porto Rico, Stevens 7742, type (FLS, F).

(1787) *Irenopsis guignardii* (Gaill.) Stev., Ann. Mycol. **25**: 433. 1927.

= *Meliola guignardii* Gaill., Bull. Soc. Myc. France, 1892, p. 176.

Cols. epiphyllous, dense, to 2 mm. diam. Hyphae tortuous, cells mostly 20—40×8—11 μ, branching opposite or irregular, densely interwoven-reticulate. Ch. alternate or unilateral, straight or irregularly bent, 35—55 μ long; stc. cuneate to cylindric, 10—25 μ long; hc. globose to clavate, irregulrly rounded-angulose to lobate, versiform, 25—35×13—25 μ. Mh. mixed with ch., alternate, rarely opposite, ampulliform, 20—25×8—9 μ. P. in central group of 2—3. verrucose, to 450 μ diam.; ps. numerous, flexuous to tortuous, to 500×8—10 μ,

2—3-septate, simple, obtuse or slightly clavulate, smooth, dark brown, often reflexed to the mycelial network around the perithecium, originating from upper half of wall. Sp. oblong to subellipsoid, obtuse, 3-septate, constricted, 50—56×22—24 μ.

On indet. Dicotyledon, Ecuador, Lagerheim, type (P).

(1788) *Irenopsis laevis* (B. & C.) Hansf., Sydowia **9**: 52. 1955.

= *Meliola laevis* Berk. & Curt. in herb.

Cols. amphigenous, to 2 mm. diam., dense, smooth. Hyphae substraight, cells mostly 10—15×7—8 μ, branching opposite, acute to wide, very densely reticulate and almost solid. Ch. opposite or less commonly alternate, more or less antrorse, straight, 13—20 μ long; stc. cuneate to cylindric, 2—5 μ long; hc. subglobose to widely piriform, entire, 10—15×9—12 μ. Mh. few. mixed with ch., alternate or opposite, ampulliform, 13—20×7—8 μ. P. scattered or in loose central group, verrucose, to 160 μ diam., surface cells obtusely conoid; ps. 4—12, erect-spreading from upper half of P., straight, simple, subacute, continous or 1-septate, to 90×8—9 μ, the upper part paler brown and the surface closely verruculose. Sp. cylindric to ellipsoid, obtuse, 4-septate, constricted, 37—42×17—19 μ.

On indet. Dicotyledon, Cuba, Wright in Herb. Kew (scr. 396, Curtis), type.

(1789) *Asteridiella ampullifera* (Wint.) Hansf., Sydowia **10**: 46. 1957.

= *Meliola ampullifera* Wint. Rev. Mycol. **26**: 206. 1885.

= *Irene ampullifera* (Wint.) Theiss. & Syd., Ann. Mycol. **16**: 461. 1917.

Irenina ampullifera (Wint.) Stev., l. c., **25**: 450. 1927.

Colonies very thin, to 5 mm. diam. Hyphae repent, ramose, 7 μ wide, closely interwoven. Mh. often opposite, sessile, ventricose at base, attenuate above into long cylindrical neck, about 30 μ long, 5,5—6 μ thick below, the neck 3,5 μ thick. P. in central group, verruculose, to 270 μ diam. Sp. oblong-cylindric, obtuse, 4-septate, constricted, 47—58×17—19 μ.

On unknown host, Paraguay, Balansa.

This is known to the present author only from the original description, which does not mention the capitate hyphopodia. Reexamination of the type is required to establish this species on a firm basis.

(1790) *Asteridiella boni* (Gaill.) Hansf., Sydowia 10: 47. 1956.

= *Meliola boni* Gaill., Le Genre *Meliola*, 1892, p. 39.

= *Irene boni* (Gaill.) Theiss. & Syd., Ann. Mycol. **15**: 194. 1917.

= *Irenina boni* (Gaill.) Stev., l. c., **25**: 449. 1927.

Cols. epiphyllous, to 1 mm. diam., dense, smooth. Hyphae substraight, cells mostly 18—25×7—8 μ, branching opposite, acute, closely radiating-reticulate. Ch. alternate, subantrorse, straight or

slightly bent, 20—90 μ long; stc. cuneate to cylindric, 6—10 μ long; hc. irregularly 2—4-rounded-lobate, 13—19×12—18 μ. Mh. mixed with ch., alternate, ampulliform, 18×8 μ. P. in loose central group, verrucose, to 230 μ diam., surface cells obtusely conoid, to 20 μ high. Sp. more or less bent, fusoid, obtuse, 3-septate, constricted, 47—52× 18—22 μ, the end cells slightly smaller.

On indet. Dicotyledon, Tonkin, Bon 3319, type (P).

(1791) *Asteridiella conglomerata* (Wint.) Hansf., Sydowia **10**: 47. 47. 1957.

= *Meliola conglomerata* Wint., Hedwigia **25**: 95. 1886.

= *Irenina conglomerata* (Wint.) Stev., Ann. Mycol. **25**: 453. 1927.

Cols. epiphyllous, to 2 mm. diam., dense, smooth. Hyphae flexuous, ramose, densely reticulate. Ch. closely crowded, mostly alternate; hc. subglobose to wide piriform, straight or slightly bent. P. in close central group, rough with crowded, pyramidal, large protuberances, to 250 μ diam. Sp. oblong, obtuse, 4-septate, 35—39×14—16 μ.

On unknown host, San Thome, Moller.

The present writer has been unable to trace authentic specimens of this species, known to him only from the original description above.

(1792) *Asteridiella glabriuscula* (Speg.) Hansf., Sydowia **10**: 48. 1957.

= *Meliola glabriuscula* Speg., Rev. Mus. La Plata, **15**: 15. 1908.

Cols. epiphyllous, to 2 mm. diam., or confluent over leaf, thin, smooth. Hyphae substraight to undulate, branching opposite or irregular at wide angles, loosely reticulate, cells mostly 20—30×7—8 μ. Ch. alternate only, subantrorse, straight or slightly bent, 15—22 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. subglobose to piriform, entire, 11—15×10—13 μ. Mh. mixed with ch., few, opposite or alternate, ampulliform, 14—18×7—8 μ. P. in loose central group, rough, to 220 μ diam.; surface cells rounded, to 12 μ high. Sp. subellipsoid, obtuse, 4-septate, constricted, 35—40×14—15 μ.

On indet. Dicotyledon, Brazil, Usteri 29, 33 (SPEG 572, type).

Stevens in Ann. Mycol. **26**: 232, 1928, gives the host as ? *Photinia* sp., but there is no note of this on the type packet; Stevens & Roldan in Philipp. Journ. Sci. **56**: 61, 1935, give the formula as 3133.3231, obviously based on some collection other than the type, which has no setae.

(1793) *Asteridiella subcrustacea* (Speg.) Hansf., Sydowia **10**: 50. 1957.

= *Meliola subcrustacea* Speg., Bol. Acad. Cienc. Cordoba, **11**: 236. 1889.

= *Irene subcrustacea* (Speg.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

Cols. amphigenous, on lower surface mostly around the leaf

margin, to 2 mm. diam., smooth, dense. Hyphae substraight to slightly undulate, branching opposite, acute to wide, densely radiating-reticulate, cells mostly 12—25×9—12 μ. Ch. alternate, antrorse, straight, 23—35 μ long; stc. cylindric to cuneate, 4—12 μ long; hc. clavulate, margin crenulate to sublobate, rarely entire, 18—27×12—18 μ. Mh. mixed with ch., crowded, opposite or alternate, ampulliform, 20—25×8—10 μ. Setae none. P. in central group, verrucose, to 290 μ diam., surface cells rounded, slightly projecting. Sp. ellipsoid, obtuse, 4-septate, constricted, 60—67×26—30×20—25 μ.

On indet. Dicotyledon, Brazil, Puiggari 2703, type (= SPEG 527).

The host leaf is scabrous-hairy on the upper surface, and has pale brown hairs on lower surface and evidently is not Magnoliaceous; hence Stevens was in error in uniting this species with *M. crustacea* Speg.

(1794) **Asteridiella venezuelensis** (Syd.) Hansf., comb. n.

= *Meliola venezuelensis* Syd., Ann. Mycol. **28**: 63. 1930.

Cols. epiphyllous, minute, numerous and widely confluent, smooth. Hyphae sinuous to tortuous, cells mostly 20—30×7—9 μ, branching opposite or irregular, acute, closely interwoven-reticulate. Ch. alternate, spreading or antrorse, straight or bent, 14—22 μ long; stc. cylindric to cuneate, 5—10 μ long; hc. ovate, globose or rarely somewhat irregularly rounded-angulose, 9—14×8—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—22×5—7 μ. Setae none. P. loosely scattered, globose, to 180 μ diam.; surface cells mostly growing out into semi-translucent dark brown, continuous, cylindric to obtuse conoid processes, to 40 μ long by about 20 μ thick, straight or bent at the tips, smooth. Sp. oblong to ellipsoid, obtuse, 4-septate, constricted, 35—42×12—14 μ.

On indet. Dicotyledon, Venezuela, Sydow, Fung. venez. 389, type.

(1795) *Meliola acamptinga* Speg., Rev. Mus. La Plata, **15**: 15. 1908.

Cols. epiphyllous, to 2 mm. diam., thin. Hyphae straight, branching opposite at wide angles, loosely reticulate, cells mostly 25—30×6—9 μ. Ch. alternate or less commonly opposite, subantrorse, usually straight, 20—27 μ long; stc. cylindric, 3—6 μ long; hc. oblong, usually straight, entire, 16—23×7—10 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 18—24×7—9 μ. Ms. few, grouped around P., to 1400×8—10 μ, simple, acute. P. scattered, verrucose, to 240 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 40—46×15—17 μ.

On indet. Dicotyledon, Brazil, Usteri 49 (= SPEG 566, type).

(1796) *Meliola acanthopoda* Pat. in Pat. & Lagerh., Bull. Soc. Myc. France, **11**: 222. 1895.

Cols. amphigenous, on upper surface 1—2 mm. diam., on lower surface to 4 mm. or confluent, thin, smooth. Hyphae substraight to undulate, branching opposite at wide angles. loosely reticulate, cells mostly 15—27×8—9,5 μ. Ch. alternate, antrorse, straight or

bent, 18—27 μ long; stc. cuneate to cylindric, 4—9 μ long; hc. irregularly stellate-lobate, versiform, 14—19×13—19 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 16—20×7—9 μ. P. loosely scattered, globose, verrucose, to 180 μ diam., surface cells conoid, to 13 μ high; ps. 0—7, straight, 2—3-septate, smooth, dark brown, to 110 μ long by 10 μ thick at base, gradually attenuate to 3—4 μ at apex. Sp. subellipsoid, obtuse, 4-septate, constricted, 43—48×19—22 μ.

On unknown host, Ecuador, Lagerheim, type (Herb. Patouillard in F.

In view of the origin of the setae from the perithecial wall, and not from around the base of the P. as originally described, this species must be transferred as **Irenopsis acanthopoda** (Pat.) Hansf., comb. n.

(1797) *Meliola andina* Gaill., Bull. Soc. Myc. France, 8: 185. 1892.

Cols. amphigenous, mostly hypophyllous, dense, velvety, to 5 mm. diam. Hyphae flexuous to sinuous, cells mostly 15—20×7—9 μ, branching opposite at wide angles, densely reticulate. Ch. alternate or less commonly (to about 3%) opposite, spreading, straight, 11—17 μ long; stc. cylindric, 2—6 μ long; hc. globose, entire, 10—13 μ diam. Mh. few, mixed with ch., opposite or alternate, ampulliform. Ms. few to numerous, straight, to 280×7—9 μ, apex very shortly bifurcate to 8 μ, the branches spreading and usually 2-dentate to 10 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 31—35×13—14 μ.

On indet. Dicotyledon, Ecuador, Lagerheim, type (P,S).

(1798) *Meliola balansae* Gaill., Le Genere Meliola, 1892, p. 95.

Cols. epiphyllous, dense, to 5 mm. diam. or confluent, velvety. Hyphae substraight, cells mostly 15—25×8—9 μ, branching opposite, acute, densely radiating-reticulate. Ch. alternate, antrorse, straight or bent, 23—33 μ long; stc. cuneate to cylindric, 6—10 μ long; hc. cylindric with widely rounded apex, entire, 18—23×10—15 μ. Mh. few, separate, opposite or alternate, ampulliform, 18—24×6—8 μ. Ms. closely scattered, simple, acute when fully mature, to 350×8—10 μ, the upper half widely hamate-uncinate or irregularly curved, not straight. P. scattered, verrucose, to 260 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 48—59×22—26 μ. Many colonies have few or no setae.

On indet. Dicotyledon, Paraguay, Balansa 4018, type (P).

(1799) *Meliola effusa* Gaill., Le Genere Meliola, 1892, p. 91.

Cols. hypophyllous, thin, to 10 mm. diam. or confluent.Hyphae undulate to flexuous, cells mostly 20—30×5—8 μ, branching opposite or irregular at wide angles, loosely interwoven-reticulate, becoming denser in centre. Ch. alternate or very rarely (less than 1%) opposite, straight or bent, 14—22 μ long; Stc. cylindric, 4—9 μ long; hc. ovate to piriform, entire, often bent, 10—15×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 16—23×7—8 μ. Ms. thinly scat-

tered, and grouped around P., straight, simple, acute, to 900×9—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong with obtusely conoid ends, 4—septate, constricted, 50—56×16—18 μ.

On indet. Dicotyledon, Surinam, Kegel 596, type (P).

(1800) *Meliola forbesii* Gaill., Le Genre Meliola, 1892, p. 110.

Cols. epiphyllous, thin, smooth, to 2 mm. diam. Hyphae straight, cells mostly 25—35×7—10 μ, branching opposite, acute, loosely radiating-reticulate. Ch. alternate or about 5% opposite, more or less antrorse, straight or slightly bent, 16—20 μ long; stc. cuneate to cylindric, 4—7 μ long; hc. subglobose to ovoid, entire, 12—14×10—12 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 19—25×8—10 μ. Ms. scattered, straight, to 280 μ long. 1—2-dichotomous above, with branches dentate. P. scattered, verrucose, to 130 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 35—39×14—16 μ.

On indet. Dicotyledon, Sumatra, Forbes 2893, type (P).

(1801) *Meliola formosa* Welw. & Curr., Trans. Linn. Soc. London, I: 26: 284. 1870.

Hyphae creeping, effuse, reticulate, pinnate-ramose, with scattered setae. P. globose; Sp. ellipsoid or slightly bent, 3—4-septate, 30 μ long.

On unknown host, Angola, "no. 40".

I am indebted to Mr. F. C. Deighton for a copy of the original description and notes, together with a tracing of the accompanying figures. The latter represent a *Meliola* mycelium with opposite hyphopodia; head cells oblong, entire; mh. mixed with ch. The spores are drawn as 3-septate. The setae described could possibly be the conidiophores of a parasitic *Helminthosporium*, together with the isolated "spores" drawn. Until the original specimen can be located and re-examined, this must remain a very doubtful species.

(1803) *Meliola insignis* Gaill., Le Genre Meliola, 1892, p. 44.

Cols. epiphyllous, thin, to 2 mm. diam., smooth. Hyphae straight, cells mostly 15—25×7—8 μ, branching opposite, wide, loosely reticulate. Ch. alternate or opposite in variable proportions, more or less antrorse, straight, 18—25 μ long; stc. cylindric, 3—6 μ long; hc. cylindric to clavulate, entire 13—20×8—10 μ. Mh. not seen. Ms., none now remain (Stevens in Ann. Mycol. 26: 166. 1928, gives them as 250—320 μ long, simple, straight, obtuse). P., none now remain (Gaillard: scattered, verrucose. to 250 μ diam.). Sp. oblong to subellipsoid, obtuse, 4-septate, constricted. 47×20 μ, few seen.

On indet. Dicotyledon, Sumatra, Forbes 3045-a, type (P).

Very little now remains of the type specimen, save colonies parasitised by *Arthrobotryum;* I was unable to discover whence Gaillard obtained the spores "3-septate, 34—35×14—15 μ"; those given above were germinating with the correct hypopodia. Unless it proves possible to re-collect this species in Sumatra and match the type exactly, it would be best to discard it as doubtful.

(1804) *Meliola leopoldina* Theiss., Broteria **12**: 25. 1914.

Cols. epiphyllous, to 2 mm. diam., dense, subvelvety. Hyphae straight, cells mostly 20—30×7—9 μ, branching opposite, acute, closely reticulate. Ch. opposite or alternate, 16—20 μ long; subantrorse, straight or slightly bent; stc. cuneate to cylindric, 2—6 μ long; hc. subglobose to ovate, entire, 11—15×9—11 μ. Ms. scattered and grouped around P., numerous, to 350×10 μ, straight, simple, acute. P. scattered, verrucose, to 320 μ diam. Sp. subellipsoid, obtuse, 4-septate, constricted, 47—54×18—21 μ.

On indet. Dicotyledon, Brazil, Rick s. n. (S, type).

(1805) *Meliola leptopus* Theiss., Broteria **12**: 23. 1914.

Cols. epiphyllous, to 3 mm. diam., thin to subdense, numerous and widely confluent. Hyphae straight to undulate, cells mostly 20—25×6—7 μ branching opposite at wide angles, loosely reticulate. Ch. alternate or to 30% opposite, more or less antrorse, usually straight or slightly bent, 14—20 μ long; stc. cylindric, 2—6 μ long; hc. subglobose to widely elliptic. entire, 8—13×7—9 μ. Mh. few, mixed with ch., opposite or alternate, ampulliform, 14—18×6—8 μ. Ms. scattered, straight, simple, acute, to 350×8 μ. P. scattered, verrucose, to 280 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, constricted, 38—44×16—18×13—15 μ.

On indet. Dicotyledon, Brazil, type in S.

(1806) *Meliola mattogrossensis* Starb., Arkiv. for Bot. **2**: 10. 1904.

Cols. epiphyllous, to 2 mm. diam., dense, velvety, numerous and confluent over leaf, sometimes hypophyllous. Hyphae substraight to undulate. cells mostly 15—20×5—6 μ, branching opposite at wide angles, closely interwoven-reticulate. Ch. alternate or opposite in varying proportions, spreading, straight or bent, 10—14 μ long; stc. cylindric, 2—4 μ long; hc. oblong with rounded apex, entire, 8—11×6—9 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 13—18×6—7 μ. Ms. numerous, straight, simple and acute or 2—3-dentate to 7 μ, up to 400×6—8 μ, gradually attenuate upwards. P. scattered, verrucose, to 170 μ diam. Sp. oblong to subellipsoid, obtuse, 4-septate, slightly constricted, 28—34×11—13×9—11 μ.

On indet. Dicotyledon, Matto-Grosso, Brazil, Lindmann, Regnell Exped. 524, type (S).

Other larger spores, 35—40×14—15 μ are present on the specimen, possibly belonging to a second species of *Meliola*, having much larger, alternate ch., present as traces only.

(1807) *Meliola mitchellae* Cooke var .*orthopus* Theiss., Broteria **9**: 34. 1910.

Cols. amphigenous, to 3 mm. diam., thin. Hyphae brown, opposite-branched, 6—8 μ thick, the cells elongate. Ch. alternate, shortly stipitate, cylindric, 18—22×8—9 μ. Ms. straight, acute, to 300×

8—9 μ, simple, apex 2—3 μ thick. Sp. 4-septate, slightly constricted, 44—50×16—20 μ, obtuse.

On uknown host, Brazil, Theissen.

This is known to the present author only from the description in Syll. Fung. 22: 55. 1913; it is not represented in the Theissen Herbarium at Harvard under this name.

(1808) *Meliola orbicularis* B. & C., Journ. Linn. Soc. London, **10**: 392. 1869.

= *Meliolina orbicularis* (B. &C.) Stev., Ann. Mycol. 25: 417. 1927.

Cols. caulicolous, dense, velvety, to 15 mm. diam. The mycelium of dark hyphae appears to be entirely subcuticular, and does not form hyphopodia or similar structures. Every cell appears to form one or more erect mycelial setae, wich form a very dense covering to the colony, and amongst which are the numerous perithecia. Ms. uncinate, or irregularly bent, to almost straight, simple, obtuse, opaque black, to 250×9—11 μ. P. somewhat conoid, sometimes slightly attenuate below, black, glabrous, rather thickwalled and brittle, subcarbonaceous; surface cells convex to slightly papillate. Asci not seen. Sp. cylindric, dark brown, thick-walled, obtuse, 4-septate, slightly constricted, smooth, 55—65×16—20 μ.

On indet. host, Cuba, Wright 557 (type), 880 (K); Brisbane, Queensland, Bailey 831.

This is neither a true *Meliola*, nor a *Meliolina*. New collections are required in the fresh state to elucidate its structure, mode of parasitisem and development of perithecia. Apparently it represents a new genus, when these details can be discovered.

(1809) *Meliola pennata* Hoehnel, Sitzb. K. Akad. Wiss. Wien, Math.-naturw. Kl. **118**: 857. 1919.

Cols. epiphyllous, thin to dense, thinly velvety, to 4 mm. diam. Hyphae straight, branching opposite at about 45°, becoming closely reticulate, cells mostly 20—30×7—10 μ. Ch. alternate, subantrorse, straight or bent, 30—38 μ long; stc. cuneate, 7—10 μ long; hc. subconoid with attenuate-rounded apex, entire, 22—30×11—14 μ. Mh. mostly separate, opposite or alternate, ampulliform, 23—28×7—9 μ. Ms. scattered and grouped around P., straight, simple, acute, to 750×9—10 μ. P. scattered, verrucose, to 190 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 46—54×21—24 μ.

On unknown host, Buitenzorg, Java, Von Hoehnel, type (F).

(1810) *Meliola perexigua* Gaill.. Le Genre Meliola, 1892, p. 98.

Cols. hypophyllous, thin, diffuse and widely confluent, almost smooth. Hyphae substraight, cells mostly 25—30×5—6 μ, branching opposite or irregular at wide angles, loosely reticulate, becoming interwoven and denser. Ch. alternate, more or less antrorse, straightly

or slightly bent, 12—16 μ long; stc. cylindric, 3—6 μ long; hc. ovate, entire, 9—12×7—8 μ. Mh. few, mixed with ch., alternate, ampulliform, 14—18×6—7 μ. Ms. few, scattered and grouped around P., straight, simple and acute, or less commonly 2—3-dentate to 7 μ, up to 270×6—8 μ. P. few, loosely scattered, verrucose to 150 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 28—33×11—12×8—9 μ.

On indet. Dicotyledon, Congo Francaise, Thollon, type (P).

(1811) *Meliola rehmii* Stev., Ann. Mycol. 26: 222. 1928.

= *Meliola horrida* Rehm, Philipp. Journ. Sci., C. Botany, 7: 393. 1913; non Ell. & Everh., 1893.

Cols. amphigenous, to 4 mm. diam., very dense, velvety. Hyphae straight, cells mostly 10—20×6—7 μ, branching opposite, acute, close, very densely reticulate and nearly solid. Ch. opposite save where too crowded, antrorse, straight or slightly bent, 10—13 μ long; stc. cylindric to cuneate, 2—4 μ long; hc. globose to ovate, entire, 8—10 μ diam. Mh. few, mixed with ch., alternate or opposite, ampulliform. Ms. numerous, closely scattered, straight, simple, acute, to 450×10—11 μ. P. scattered, verrucose, to 180 μ diam. Sp. oblong to subellipsoid, 4-septate, constricted, obtuse, 37—45×17—19×14—16 μ.

On indet. Dicotyledon, Philippines, Baker 976, type (S, ex Rehm).

(1811-a) **Meliola tahitensis** Pat. ex Hansf., sp. n.

Plagulae amphigenae, densae, velutinae, usque ad 2 mm. diam. vel numerosae confluentesque. Hyphae brunneae, subrectae vel undulate, alternatim vel irregulariter acuteque ramosae, dense reticulatae et subsolidae, cellulis plerumque 10—25×8—11 μ. Hyphopodia capitata alternata, antrorsa vel patentia, recta vel curvata, 25—37 μ longa; cellula basali cuneata vel cylindracea, 8—14 μ longa; cellula apicali versiformi, angulosa vel sublobata, raro integra, recta vel curvata, 18—23×18—22 μ. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 19—22×9—11 μ. Setae myceliales numerosae, dispersae, etiam juxta perthecia aggregatae, deorsum rectae, sursum arcuatae vel uncinatae, apice abrupte acutae, atrae, usque ad 490×12—15 μ. Perithecia dispersa vel subaggregata, atra, globosa, verrucosa, usque ad 220 μ diam.; setae peritheciales 2—7, arcuatae vel circinatae, atrae, apice abrupte acutae, 2—4-septatae, usque ad 250×9—12 μ. Sporae atrobrunneae, oblongae, obtusae, 4-septatae, leniter constrictae, 49—62×17—20×15—17 μ.

Hab. in foliis plantae ignotae (Dicotyledon), Tahiti, Herb. Paucher no. 10 in Herb. Patouillard, typus (Farlow Herb.).

This species is somewhat akin to *M. juddiana* Stev., but the spores are very much narrower and all mycelial setae are strongly arcuate to uncinate, as well as those arising from the upper half of the perithecium. The species is so distinctive as to warrant description

as new, in spite of the uncertain host; it was found in Patouillard Herb. under the above name, apparently unpublished.

(1812) *Meliola thollonis* Gaill., Le Genre Meliola, 1892, p. 88.

Cols. amphigenous, mostly hypophyllous, to 5 mm. diam., subdense, slightly velvety. Hyphae undulate to tortuous, cells mostly 20—30×7—8 μ, branching alternate or opposite, wide, closely reticulate. Ch. alternate or about 5% opposite, straight or bent, spreading or antrorse, 22—30 μ long; stc. cylindric to cuneate, 4—8 μ long; hc. ovate to cylindric with rounded apex, on upper surface entire, on lower surface often irregularly rounded-angulose, 15—23×9—12 μ. Mh. mixed with ch., alternate or opposite, ampulliform, 20—30×7—9 μ, neck elongate. Ms. scattered and grouped around P., on upper surface 200—270 μ long, on lower surface to 400 μ long, simple, straight, acute, 8—9 μ thick below. P. scattered, globose, verrucose, —250 μ diam. Sp. cylindric, obtuse, 4-septate, constricted, 61—68×22—24 μ.

On indet. dicotyledon, Congo Francaise, Thollon 23. type (P).

(1813) *Meliola wainioi* Pat., Journ. de Bot., 1890, p. 200.

Cols. dense, velvety, irregular. Hyphae substraight to slightly undulate, cells mostly 25—40×7—9 μ, branching opposite, acute, densely reticulate. Ch. alternate, straight or bent, more or less antrorse, 25—40 μ long; stc. cylindric to cuneate, 7—15 μ long; hc. subglobose to irregularly crenate-angulose, 19—25×15—22 μ.Mh. not seen. Ms. very numerous, scattered, simple, obtuse, to 400×9—10 μ, attenuate upwards, uncinate, hamate, or loosely circinate in upper half. P. scattered, verrucose, to 320 μ diam. Sp. subellipsoid, obtuse, 3-septate, constricted, 63—72×20—25 μ, end cells smaller.

On indet. Dicotyledon, Brazil, Wainio 1121, type (P).

(1814) *Meliola zig-zag* Berk. var. *discreta* Starb., Arkiv. for Bot. 5: 7. 1905.

Cols. epiphyllous, to 2 mm. diam., scattered, rarely confluent, dense. Hyphae substraight to undulate, cells mostly 20—25×7—9 μ, branching opposite at wide angles, becoming closely reticulate. Ch. Ch. alternate, more or less antrorse, straight or bent, 15—20 μ long; stc. cylindric, 2—5 μ long; hc. ovate to subglobose, entire, 10—16×9—11 μ. Mh. mixed with ch., opposite or alternate, ampulliform, 14—17×8—10 μ. Ms. scattered and grouped around P., straight, simple, obtuse to acute, 150—250×8—10 μ. P. scattered, verrucose, to 210 μ diam. Sp. oblong, obtuse, 4-septate, constricted, 44—48×15—18 μ.

On indet. Dicotyledon, Brazil, Malme, type (S).

The host was originally given as possibly a species of *Cinnamomum*, but does not belong to that genus, nor probably even to *Lauraceae*.

Species Excludendae

1. *Meliola abietis* (Cooke) Sacc., Syll. Fung. 1:69. 1892. = *Apiosporium abietis* Cooke, Grevillea 9:94. 1881.
2. *Meliola abjecta* (Wallr.) Schroet. in Rabh. Fung. europ. 2424. — This is *Asterina veronicae* (Lib.) Cooke.
3. *Meliola amphitricha* Fr., Syst. Myc. 2:513. 1823. — As explained above no type specimen or type host can be assigned to this "species", and hence the epithet is discarded.
4. *Meliola arborescens* Syd., Ann. Mycol. 11:256. 1913. — This is known as *Meliolina arborescens* (Syd.) Syd.
5. *Meliola baccharidis* Berk. & Rav., Rrevillea 4:158. 1876. — This is *Dimeriella melioloides* (B. & C.) Theiss.
6. *Meliola balsamicola* Peck, Rept. N. Y. Sta. Mus. 34:52. 1881. — Hahn in Mycologia 39:487, 1947 reported a study of the type, which he placed as *Dimerosporium balsamicola* (Peck) Ell. & Ev., stating that it was of "Perisporiaceous" nature and probably now to be placed as *Dimerium*.
7. *Meliola berkeleyi* Pat., Rev. Mycol. 10:136. 1888. — On *Drimys* sp., Queensland, Australia. — No specimen has been traced by the present author.
8. *Meliola boneti* Cif., Mycopathologia 7:103. 1954. — Specimens of this have not been available to the present writer, but ex. descr. the fungus cannot be a Meliola. The hyphopodia are described as subglobose, without a basal cell, and thus correspond to those of *Schiffnerula* and *Clypeolella*. The *Meliola* spores included in the description cannot belong to this mycelium.
9. *Meliola calendulae* Malbr. & Roun., Rev. Mycol. 8:90. 1885. — The type collection, on *Calendula*, shows this to be *Sphaerotheca*.
10. *Meliola camelliae* (Catt.) Sacc., Syll. Fung. 1:62. 1882. — Belongs to *Capnodiaceae*.
11. *Meliola citri* (Briosi & Pass.) Sacc., Syll. Fung. 1:69. 1882. — The type has not been examined by the present writer, but ex descr. evidently belongs to the *Capnodiaceae-Chaetothyriaceae* complex.
12. *Meliola citricola* K. Hara, Journ. Agric. Soc. Shidzuoka, 263:8. 1919. — = *Meliola harana* Trott., Syll. Fung. 24:337. 1926. — Ex. descr. this is probably *Chaetothyriaceous*, having *Tripospermum* conidia.
13. *Meliola cladotricha* Lev., Ann. Sci. Nat., III:5:266. 1846. — This is known as *Meliolina cladotricha* (Lev.) Syd.
14. *Meliola clavispora* Pat., Journ. de Bot. 4:61. 1890. — Now known as *Patouillardina clavispora* (Pat.) Arn.
15. *Meliola compacta* (Lev.) Speg., Fungi Chilenses 25: 1910. — The type of *Asterina compacta* Lev. is now known as *Leveillella drymidis* (Lev.) Theiss. & Syd., but Spegazzini's specimen is *Asteridiella werdermanni* Hansf., No. 2, above.
16. *Meliola fenestrata* Cooke & Ellis, Grevillea 5:95. 1877. — The type has been examined by the present writer, but probably belongs to *Capnodiaceae*.
17. *Meliola fuliginodes* (Rehm) Sacc. in Gaillard, Le Genre Meliola, 1892, p. 124. — This belongs to *Capnodiaceae*.
18. *Meliola fumago* Niessl, Hedwigia 20:99. 1881. — Belongs to *Microthyriaceae*.
19. *Meliola fuscopulveracea* Rehm, Hedwigia 40:166. 1901. — Stevens (1927) classified this as *Meliolina*, though to the present author the original description does not correspond to that genus; no specimens have been available for comparison.

20. *Meliola heteromeles* (Cooke & Harkn.) Berl. & Vogl., in Sacc. — Syll. Fung. Addit. 20. 1886. — Probably Capnodiaceous; classified as *Zukalia heteromeles* (Cke. & Harkn.) Sacc., Syll. Fung. **9**:432. 1891.
21. *Meliola loganiensis* Sacc. & Berl., Atti R. Ist. Veneto Sci. Lett. & Arti, 3:Ser. 6. 1885. — On *Smilax*, Queensland, Australia; no specimen of the type collection has become available to the present writer. The fungus was placed as *Zukalia loganiensis* (Sacc. & Berl.) Sacc. in Syll. Fung. **9**:431. 1891.
22. *Meliola macowaniana* Thuem., Flora **59**:569. 1876. — This is now known as *Parenglerula macowaniana* (Thuem.) Hoehn.
23. *Meliola malaccensis* Sacc., Bul. Orto Bot. Napoli **6**:43. 1921. — Now known as *Meliolina malaccensis* (Sacc.) Trott., in Saccardo, Syll. Fung. **24**:360. 1926.
24. *Meliola mappiae* Cif., Ann. Mycol. Berlin **29**:289. 1931. — Examination of the type collection, Ciferri, Mycofl. doming. exs. 87 (K, CUP) shows that only a species of *Asterina* is present; the original description combined the mycelium of this with sproes of some undetermined fungus, "4—5-septate, $18-22\times10-12$ μ".
25. *Meliola mollis* B. & Br., Journ. Linn. Soc. London **14**:136. 1875. — This is now known as *Meliolina mollis* (B.& Br.) Hoehn.
26. *Meliola mori* (Catt.) Sacc., Syll. Fung. **1**:68. 1882. — Belongs to the *Capnodiaceae-Chaetothyriaceae* complex.
27. *Meliola mucronata* (Mont.) Sacc., Syll. Fung. **1**:71. 1882. — This is *Capnodium mucronatum* Mont., and Saccardo's transfer was an error.
28. *Meliola octospora* Cooke, Grevillea **11**:38. 1882. — This belongs to *Meliolina*, and recent studies have indicated that it is a form of *M. clado. tricha* (Lev.) Syd.
29. *Meliola oligotricha* (Mont., Syll. Crypt., 254. 1856. — This is now known as *Neohoehnelia oligotricha* (Mont.) Theiss. & Syd.
30. *Meliola pachytricha* (Link) Sacc., Syll. Fung. **1**:71. 1882. — As far as the present writer is aware, no recent investigation of this fungus has been made, and extant descriptions are too incomplete to place it.
31. *Meliola palmae* Schw., cited by Saccardo in Syll. Fung. **1**:80, 1882, — as a possible synonym of *Capnodium fibrosum* Berk., fide Cooke.
32. *Meliola palmarum* (Kunze) Sacc., Syll. Fung. **1**:71. 1882. — According to Gaillard, Le Gener *Meliola*, 1892, p. 118, this is *Asterina palmarum* (Kunze) Gaill.
33. *Meliola patella* Theiss., Broteria **10**:27. 1910. — Theissen in Ann. Myc. **10**:26, 1912 gives this as a synonym of *Trichothyrium dubiosum*.
34. *Meliola penicillata* Lev., Ann. Sci. Nat., Bot. Ser. 3:**5**:266. 1846. — According to von Hoehnel, this is probably a *Septobasidium*.
35. *Meliola penzigi* Sacc., Syll. Fung. **1**:70. 1882. — This was later transferred to *Limacinia* by Saccardo, Syll. Fung. **14**:474, 1890; it probably belongs to *Chaetothyriaceae*.
36. *Meliola psilostomatis* Thum., Myc. Univ. 775, and Flora **60**:408. 1877. — A synonym of *Balladyna velutina* (B. & C.) Hoehnel.
37. *Meliola pulcherrima* Syd., Ann. Mycol. **11**:254. 1913. — Now known as *Meliolina pulcherrima* Syd.
38. *Meliola pulveracea* Speg., An. Soc. Cient. Argentina **12**:118. 1881. — Now known as *Dimerium pulveraceum* (Speg.) Theiss.
39. *Meliola quercinopsis* Rehm, Hedwigia **40**:166. 1901. — This consists of a species of *Phaeophragmeriella* parasitic on the mycelium of a species of *Meliola*. A similar mixture is present in var. *megalospora* Rehm, Ann. Mycol. **8**:303. 1910.
40. *Meliola sclerochitonis* Kalchbr. in Herb. MacOwan, Crypt. Austr. fr. no. 1290. — A synonym of *Asterina fimbriata* Kalchbr. & Cooke.

41. *Meliola spartinae* (Ell. & Everh.) Berl. & Vogl., Syll. Fung. Addit., p. 395, 1884. — Ex. descr. this is not a *Meliola*.
44. *Meliola spinigera* Speg., An. Soc. Cient. Argentina **9**:118. 1880. — The Herb. Spegazzini type shows only sterile spiny aggregations of dark mycelial hyphae, and bears no resemblance to *Meliola*.
45. *Meliola tetracerae* F. Mueller & Thuemen, Flora, 1878. — Saccardo in Syll. Fung. **14**:474, 1890 referred this doubtfully to *Limacinia*; it certainly is not a *Meliola*, but no specimens have been available for investigation.
46. *Meliola theobromae* Faber, Arb. K. Biol. Anst. Berlin **7**:220. 1909. — Ex descr. this cannot be a *Meliola*.
47. *Meliola torulipes* Cif., Ann. Mycol. **36**:224. 1938. — The type collection, Ciferri, Mycofl. doming. exs. 229, in both K and CUP, shows a mycelium corresponding to descr., but belongs to Microthytiaceae, having the hyphopodia one-celled. No mature fructifications or spores were found in my mounts. The Meliola spores described by Ciferri do not belong to this mycelium, which is probably of a species of *Asterina* or *Lembosia*.

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By J.A.Stevenson in

Sydowia, 22(1968), 1-4,
pp.225 - 249, 1969.

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